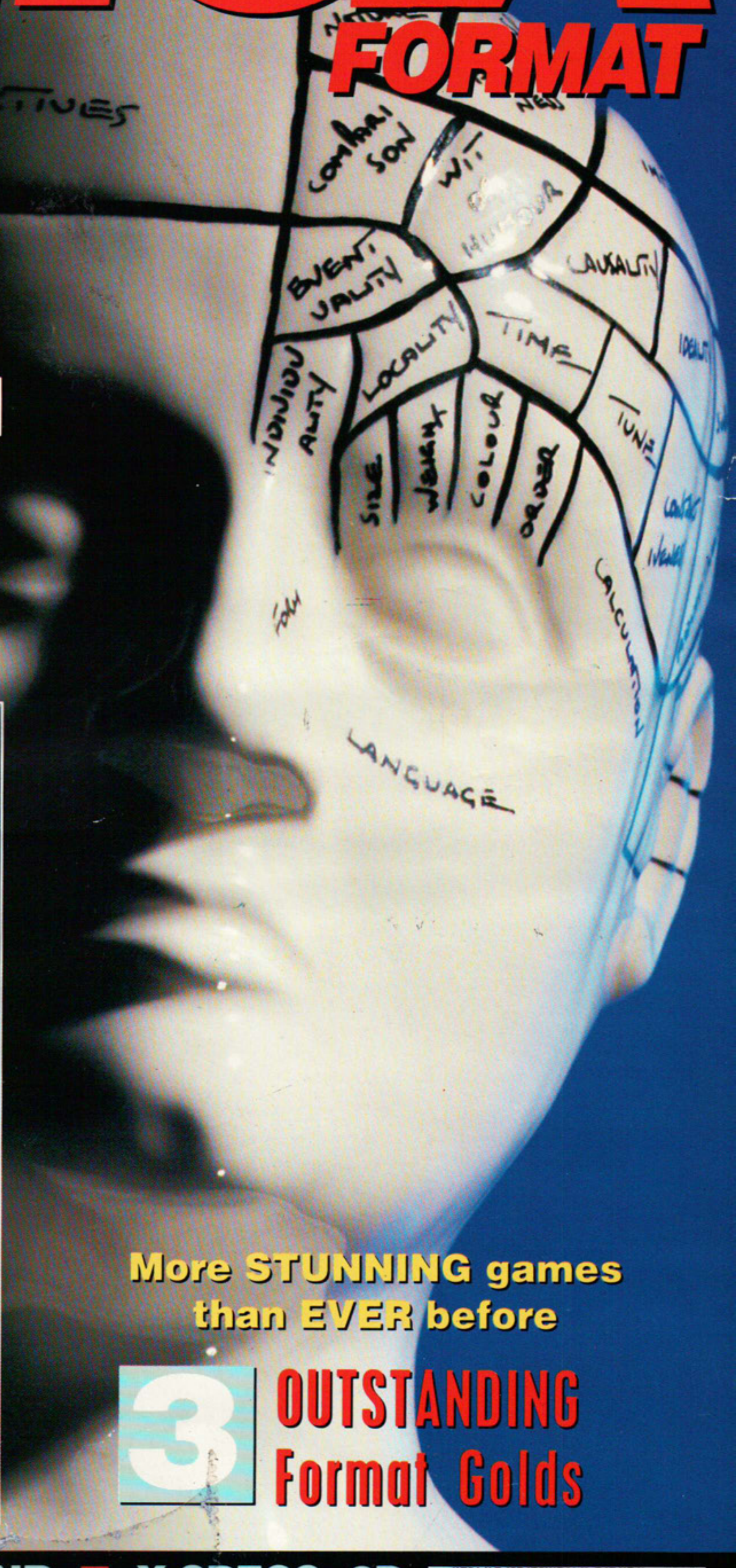
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AMIGA FORMAT

ISSUE 9 / APRIL 1990 / £2.95



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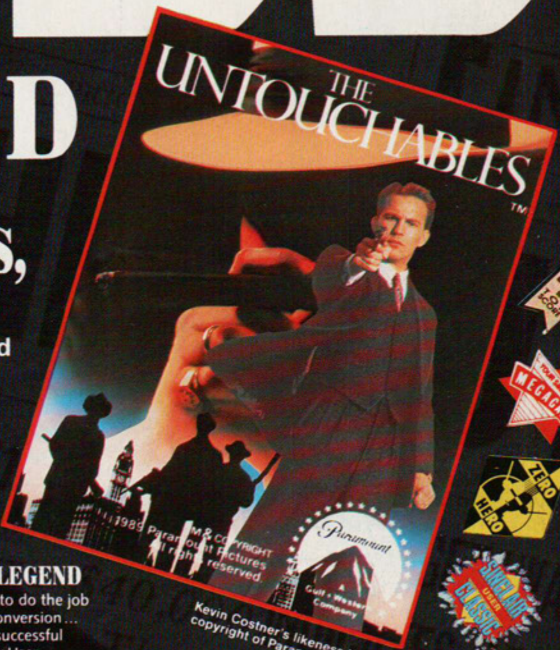
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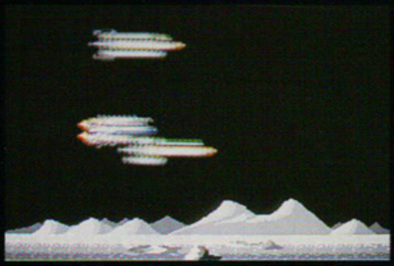
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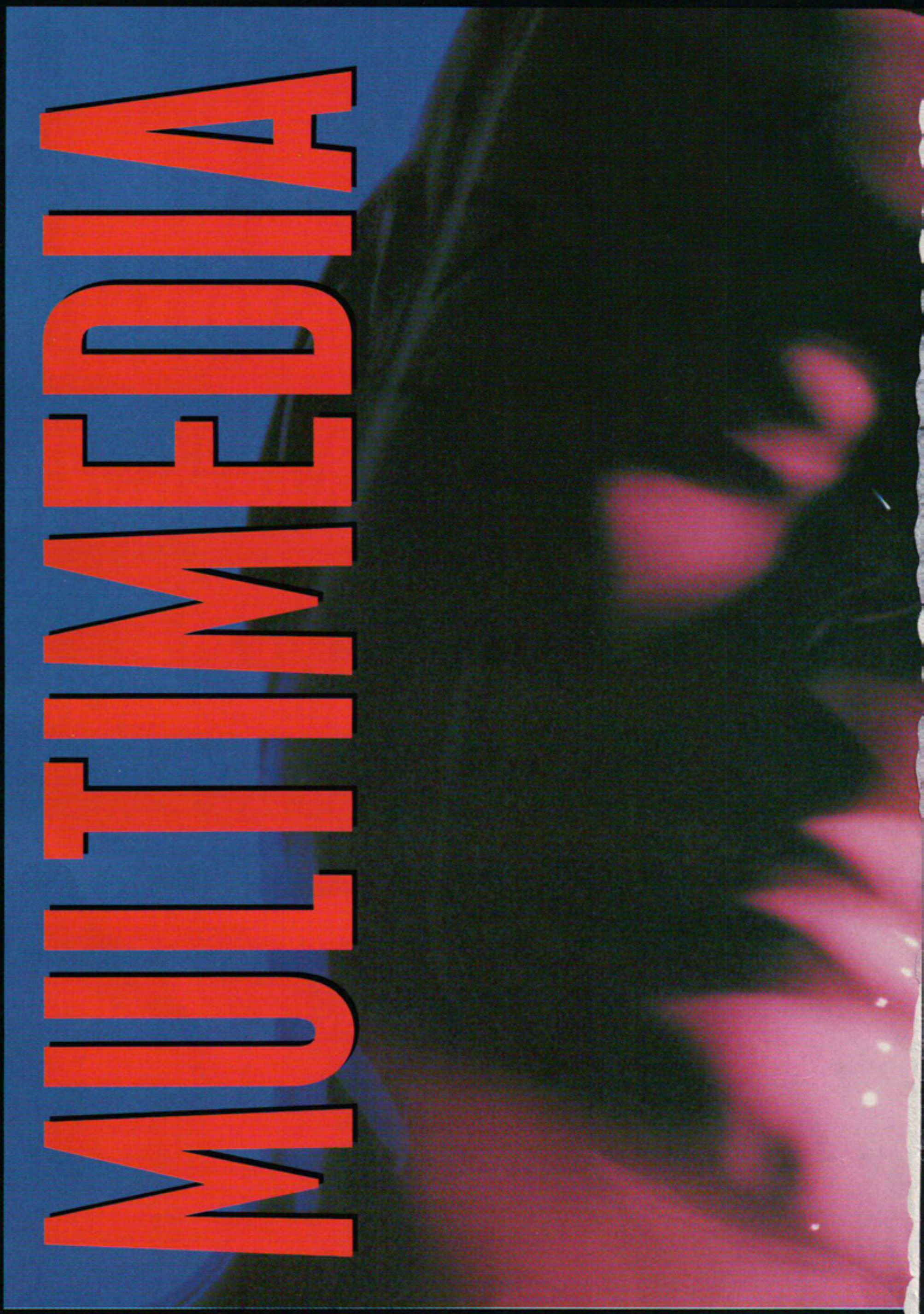


X-SPECS 69

SPECIALS

REGULARS

COMPETITION



GAMES

FORMAT GOLD

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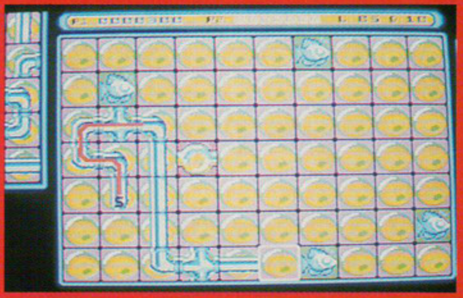
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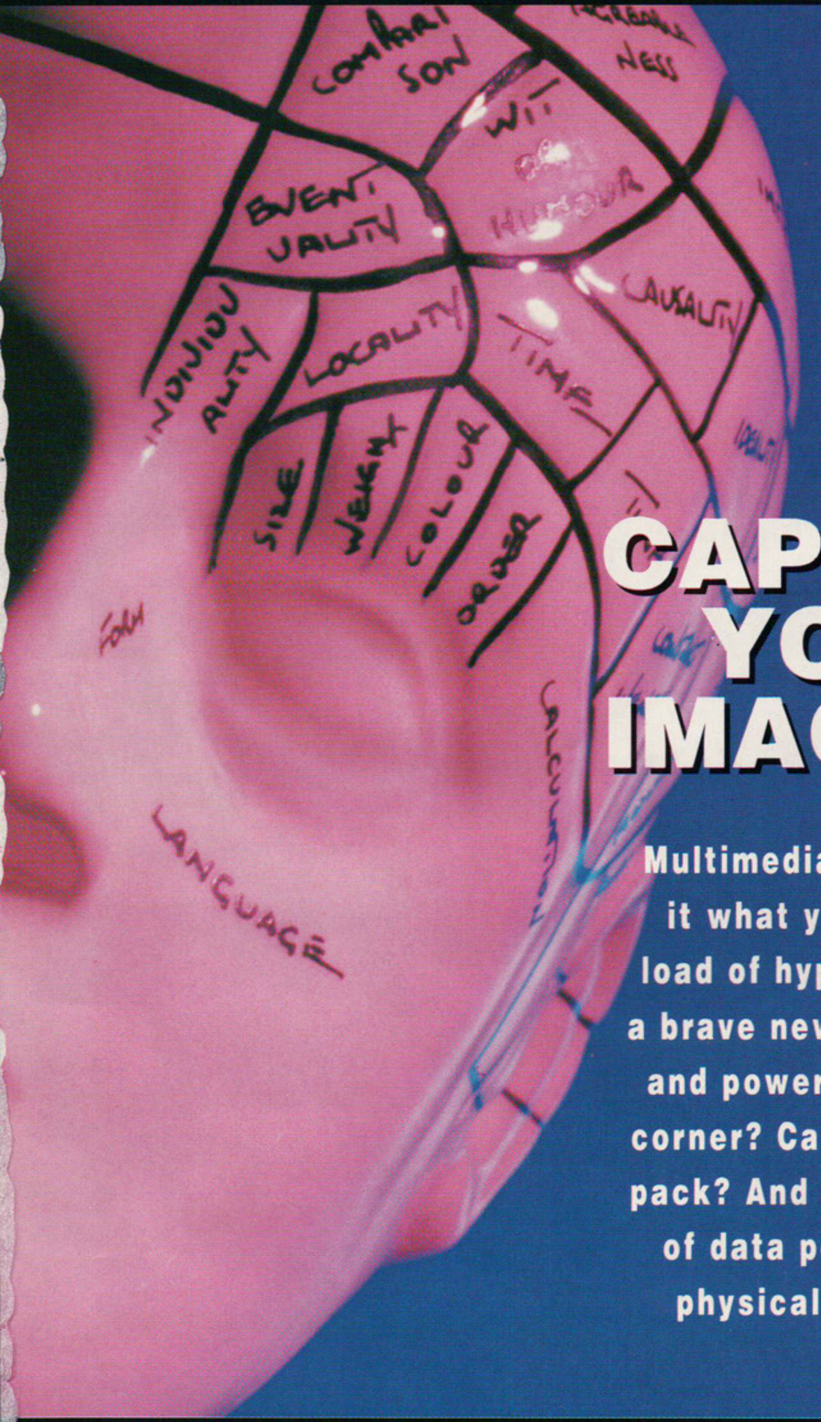
PIPE MANIA

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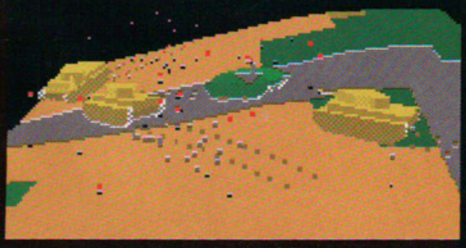
ADDICTIVE PLUMBING LUNACY FROM EMPIRE

MENACE CODE AND DEMO: Latest update for aspiring programmers ■ **VIRUS X 4:** New version of the indispensable virus killer ■ **DEVPAC 2:** Useable demo of Hisoft's assembler/editor/debugger ■ **SLEEPY:** Utility to change the 'ZZ' cloud ■ **GAMEBUSTERS:** Three more devious pokes ■ **WORKBENCH HACKS:** More entertaining hacks



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Multimedia, Hypermedia... call it what you will. Is it just a load of hype, or is there really a brave new future of simplicity and power waiting around the corner? Can the Amiga lead the pack? And will the Cyber-dream of data perceived as a solid physical world come true?



In Screen Play: *Conqueror*, a tanking good game.

REVIEWS

GOLD DISK PageSetter II

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No, you are not going crazy. What we mean to say is that Gold Disk PageSetter II gives you **High Quality Low Cost Desktop Publishing For Dot Matrix Printers**. Gold Disk PageSetter II will help you quickly and easily produce any kind of document: newsletters, flyers, resumes, ads, brochures, and more.

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Gold Disk PageSetter II is based on Professional Page - the leading DTP package on the Amiga - and features many of the same powerful capabilities and the same high level of reliability.

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AGFA Compugraphic Fonts mean no more jaggies

Graphics:

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- Import Professional Draw Clips
- Resize, rescale, crop, & move
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Requires Amiga w/ 1 MByte, 1 Drive



Gold Disk PageSetter II is available for £99.95. Current PageSetter owners can upgrade for £39.95. If you are a registered owner, please call 0895 441964 to upgrade; otherwise, send payment with manual cover or program disk.

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# of graphs	Unlimited	8
Max graph colors	16	8
# of views	Unlimited	No
Sideways Printing	Yes	No
# of funcs	90+	66
ARexx	Yes	No
Performance Comparison		
Redraw	0.87	2.35
Save	2.23	5.33
Load	3.84	6.69
Recalc		
First	2.44	5.15
2nd*	0.19	4.30
2nd**	2.24	4.88
Memory	43216	69832

* With no changes in sheet;** With changes made to sheet
Tests on 1 Mb Amiga; Spreadsheet: 9 rows x 44 columns

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F-16 SHOOTS DOWN QED

The recent programme on computer addiction in the BBC's QED series has already prompted a hostile reaction from Commodore UK boss Steve Franklin (*AF* Issue 8) and has also drawn a response from famed flight-simulation producers Digital Integration.

They quote an article by David Oliver, editor of *Airforces Monthly*, in which he talks about flight sims in general and also DI's excellent *F-16 Combat Pilot*. "Some of these products provide a strong educational basis on how to fly aircraft – and even give an excellent insight into the workload and complexities of flying something as sophisticated as the F-16, the world's leading fighter plane."

DI say that feedback to their games and the level of sales achieved contradict the conclusions reached by QED that computer games are not mentally stimulating. DI's boss Dave Marshall reckons "the popularity of games such as *F-16* will increase the number of people whose ambition it is to be a pilot and at the same time improve both their aptitude and understanding of what it is like to fly a fighter jet."

We are not convinced about flight sims as career motivators, but they are certainly mentally stimulating. It's nice to see the industry uniting in its condemnation of what was basically scare-mongering. Individual problems almost certainly do exist, but sensationalism is not going to help anyone.

AMIGA A1500 LAUNCHED

Lets face it, we'd all like to own an A2000, in preference to the more common Amiga 500. But, like all things in life, the 2000 costs trez mucho mazoolas – almost three times the cost of the Amiga 500, to be precise!

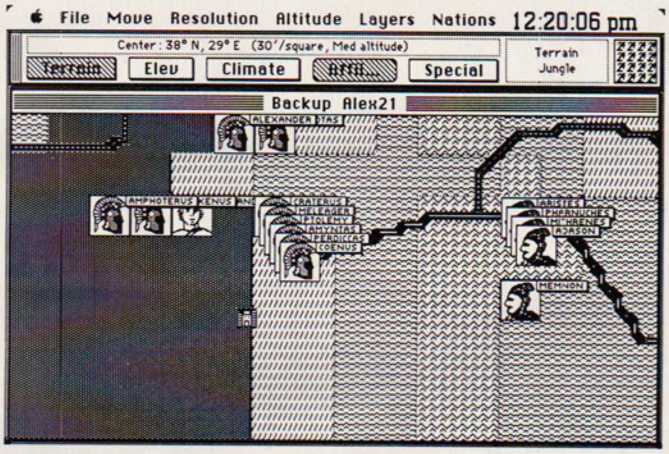
However, the dream of every Amiga 500 owner could soon be realised with the release of Checkmate Systems' Amiga A1500 conversion kit. The kit is a replacement case for the Amiga 500 that will give 500 users most of the extras present on the 2000, without having to pay a 2000-like price for the pleasure.

The A1500 comes in various configurations, depending on your needs. The base unit consists of a completely new system unit for housing the A500 circuit board and a new keyboard case to provide A500 users with something that they have been crying out for – a separate keyboard. To add to that '2000 feel', the A1500 moves the Amiga disk drive so that it faces the front and even provides space for the addition of either a second drive or any half-height 3.5-inch hard drive internally. For use within the video and music industries, the whole system unit can be mounted in a standard 19-inch rack. According to Checkmate, many big names within the music industry have already expressed interest in the new machine on the strength of this feature alone.

If looks aren't enough for you, then many extras can be added on top of this basic base unit. Surprisingly, the first option that Checkmate offer is for the addition of a 2000-compatible video slot, allowing the 1500 to use devices such as NewTek's Video Toaster and MicroWay's Flicker Fixer board. Next up is a full-spec internal MIDI interface, turning the 1500 into a real alternative to the official 2000.

If it's true power computing you're after, then Checkmate's Expansion system is for you. The expansion unit simply plugs into the top of the base unit to provide the 1500 with three expansion slots which can be used to connect 2000 cards such as processor accelerators to the 1500. Not only that, but Checkmate claim that their system can be taken a lot further than the 2000. If you ever get to a point where all three expansion slots are filled, just buy another expansion rack.

For more details of the A1500 kit, contact Checkmate Systems on 01 923 0658. As soon as our review model turns up, we'll be bringing you an in-depth look at the recased and expanded unit.



RAINBIRD GET IT IN THE END

After a lot of industry speculation and rumblings it looks likely that the much-awaited wargame *Universal Military Simulator II* will be appearing on the Rainbird label after all. The original UMS appeared on that label when it was owned by Telecomsoft and minor shock waves ran through the industry when it became apparent that rivals MicroProse had got the rights to the sequel. Just to make things simple, though, Microprose then went and bought out Telecomsoft last year.

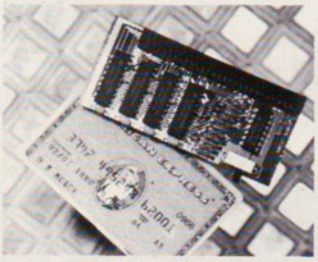
Bullish MicroProse spokesman Martin Moth describes the game as "the most comprehensive wargame ever to appear". In the game the player will be able to fight campaigns across whole continents or zoom in on individual battles from time periods right across the scale from Roman times to the future. And, just like *UMS*, you'll be able to define and design your own armies (and even your own worlds) and have them fight all manner of weird and wonderful opponents. From what we've seen of the game, Martin Moth could well be right.

MIDI MUSIC SHOW

MIDI musicians should make a note of the 7th and 8th of April in their diaries, because that's when the first MIDI Music Show takes place at the Novotel in Hammersmith. As well as exhibitors showing keyboards, hardware, software and peripherals, there will be seminars, demonstrations and conferences on subjects such as sampling, creative editing and sequencing. More details can be gleaned by calling the organisers, Westminster Exhibitions, on 01 549 3444.

CREDITABLE EXPANSION

If you want to see just how small a 0.5 Meg memory expansion board can be, then take a look at the latest from Memory Expansion Systems. It's 4cm wide, and the smallest on the market, they claim. As you can see from the picture, it is little bigger than a credit card. It comes with a 1 Meg demo as well. For more details on this and other boards, phone MES on 051 236 0480.



The MES expansion board that's the size of a credit card.

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LOONY TOONS

They're no newcomers to licensing cartoon characters, The Edge, what with a couple of Garfield games and a Snoopy game under their belt, so it's in keeping that they should be producing a new Asterix game based on the cartoon character. This is the first Edge Asterix game, but he has featured in several other games including one due soon from French house Coktel Vision called *Asterix and the Enchanted Stone.*

The Edge have also started work on another cartoon character licence but this one is more vicious than Asterix or Snoopy could ever be. The Punisher is a Marvel Comics character who dedicates his life to taking the law into his own hands and killing anyone he considers 'guilty'. This usually means drug dealers and other criminals, which is a relief to the public at large. Later this year *The Punisher - The Film* will be showing on the big screen. This is a violent film staring ex Grace Jones lover and general huge person Dolph Lundgren. The first game, however, will be based on the comic rather than the film.



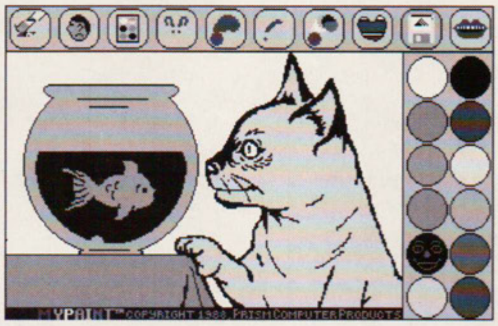
A CAT MAY LOOK AT A LEARNING AID...

Sourcing quality education software for the Amiga can be difficult unless you know where to look. To help you make the right choice, the Educational Software Club has been set up to serve the increasing demand for quality educational software for the Amiga.

The Club stocks a full range of educational titles for the Amiga, covering pre-school to adult learning. Among their list of titles are *My-Paint, Kid Talk* and the popular *Fun School* range of programs.

Although the club runs a membership scheme, their range of software is available to both members and non-members alike. Paying members recieve a regular educational software bulletin as well as being able to buy software at special prices. Not only that, but members are able to exchange titles, which should help regular computer learners.

For a full catalogue and additional information, contact the Educational Software Club on 0702 600557.



COMMODORE MULTIMEDIA SYSTEM DUE SOON

Just before going to press, we recieved information concerning the imminent launch of an official Commodore multimedia system for the Amiga. Commodore US obviously views the Amiga as a serious contender within the rapidly growing multimedia market, and this latest announcement backs up this view.

The new system is a complete multimedia authoring environment that links all the elements of multimedia under the control of a completely icon-driven user interface. The system uses the Amiga's multi-tasking capabilities, and advanced A-Rexx message-passing to allow multimedia applications to be built up utilising various media devices and applications. All this power is built upon a powerful relational database that is compatible with the popular PC dBASE database management system.

Constructing a multimedia application should be simplicity itself. By simply drawing an icon-based flowchart and then setting up each element within the flowchart using a powerful BASIC-like programming language much like UltraCard's UltraTalk, applications can be constructed. These multimedia applications will then be automatically turned into a stand-alone form, thereby allowing the creation of multimedia applications tailored to the needs of individual users. US sources close to Commodore view the system as a major advancement in multimedia which will almost certainly help to put the Amiga on the multimedia map. Watch out for the new A3000 which may be connected...

• More information about the multimedia revolution can be gained by turning to Page 15 of this issue of *AF*.

RAINBOW BUREAU

Do you need high quality printouts, scans and the like, but just can't afford the hardware? Well, what you do is let a bureau take your files'n'stuff and output them for you. One such bureau is Rainbow Computers, who run a decidedly souped-up Amiga 2000, with a lot of other bits tacked on. Here's their set-up:

- **Amiga 2000 with 17 Mb of RAM**
- **Twin floppies and a 40 Mb hard disk**
- **68020 and 68881 co-processor with a 20 MHz chip**
- **Flicker fixer**
- **Sharp JX-300 A4 colour scanner, hooked up via ASDG's ProScanLab**
- **Sharp JX-100 Handy Scanner and ASDG's software driver**
- **Sharp JX-720 48 nozzle inkjet for A3 full colour output at 240 DPI**
- **Panasonic camera and Digi-View for 3D scans**
- **Xerox 4020 inkjet for the smaller job**
- **QMS PS 810 Postscript laser printer, giving super output for DTP**
- **Polaroid Palette for 35mm slides and photographic output of screens**

If that's the sort of gear that you could use, then give Rainbow a call on 0455 840106 and they should be able to help you.

GREMLIN DO THE IMPOSSIMOLE

Remember the glorious Eighties? When computer heroes were two-dimensional and spent most of their lives collecting gems and treasure? Gremlin certainly do, thanks to the huge popularity of one such Gremlin character that appeared in several games: *Monty Mole.*

Sheffield-based Gremlin reckon the time is right to bring the character back to life in a new game called Impossimole and to ensure it gets the high profile it undoubtedly deserves Gremlin will be heavily promoting him with a veritable marketful of goodies including posters, mugs, shelf wobblers and sweatshirts.

TITUS'S DARK ENTRY

French software house Titus recently invited the cream of the British computer press over to their offices near Paris for the weekend to outline their future plans. Our man Andy Smith was on the scene.

Titus was formed in April '85 by two brothers, Herve and Eric Caen. Five years on and the company has grown to employ almost 50 people and offices have been opened in Los Angeles, Tokyo and London. The company (who are the only company in the world to give their software a lifetime guarantee) plan to release seven titles this year including *Fire and Forget II,* which will appear first on the Sega console. Before we see that on the Amiga, though, we'll see *Dark Century,* their much-talked-about ray-traced game that offers simultaneous two player action as the players take control of up to six programmable lunar assault vehicles in an attempt to apprehend some escaped convicts.

SATELLITE'S EYE VIEW

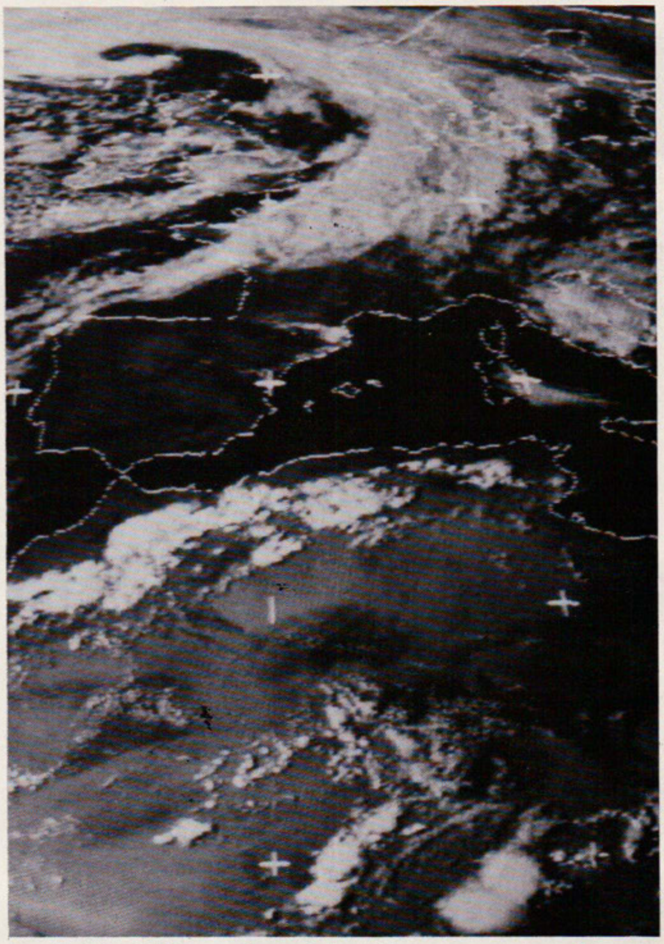
Storms need never catch you unawares again and weathermen need never ruin your day with inaccurate forecasts, because now you can get satellite weather pictures straight to your Amiga. With the Met-2 from ICS Electronics, you can receive pictures direct from the European Meteosat 4 satellite.

The system consists of a receiver/pre-amplifier, a three-metre Yagi antenna, mains power supply, 20 metres of antenna



cable and a program for the Amiga, all for the price of £599.95. The satellite takes pictures of the whole of Europe and also relays pictures of North, South and Central America. They appear in 600x400 resolution with 16 grey levels and colours, and are compatible with .ILBM and Pixmate.

ICS also produce amateur radio software for the Amiga, for the transmission of faxes and slowscan TV pictures. More information on all ICS products can be obtained on 0903 731101.



The Met-2 satellite receiver, with which you can get weather pictures on the Amiga. This picture from the Meteosat 4 satellite comes from a VGA PC, but the Amiga version has only a slightly reduced resolution by comparison.

ALL SYSTEMS ARE GREEN

Digita International, producers of many programs for small business and home use, have gone over to using 'environment friendly' paper, that does not use chlorine and contains straw fibre. All their packaging, manuals and brochures are now produced this way.

This includes their new program *System 3*, which is a small business accounting package that includes invoicing, stock control and a cashflow controller. The system operates on a modular basis, with data transferable between the modules if required. It costs £49.95 from Digita International on 0395 270273.



Digita International's range of programs that use 'environment friendly paper': ***System 3*, is the new small business program from Digita International.**

MINER EARTHQUAKE

The game that did for the Spectrum what The Juggler has done for the Amiga is due for release from its original publishers Software Projects. *Manic Miner* from Mathew Smith (no relation) helped turned the then-young programmer into a household name - but in recent years not much has been heard of this elusive character. Manic Miner will retail for £9.99.

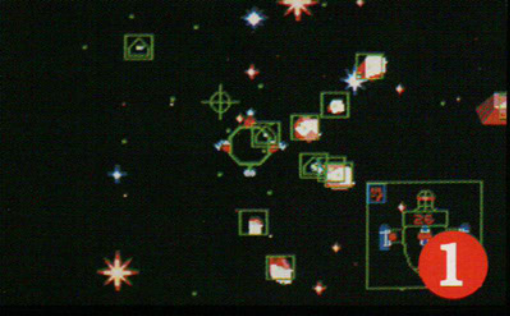
GET MUGGED BY BLOODSTONE

There's a brand new multi-user game on the loose on the Microlink service for comms users. It's called *Bloodstone* and has several outstanding or unique features for a MUG.

It's a full role-playing adventure, where your character has changeable characteristics. It has a huge map area made up of thousands of locations. It also has three dimensional access to locations, so that you can explore in and out of rooms, climb stairways and jump out of windows. There are commnds to allow the trading of items and communicate with other creatures by changing race.

The game does not last a set period of time, but allows you to carry on where you left off. It certainly sounds like a good one and if you want more info on it or joining Microlink, then call 0527 28515 Ext 2697.


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It has taken more than eight calendar years to create Knights of Legend, the crowning achievement in medieval fantasy and role playing. We've developed the most comprehensive combat system ever, surrounded by a meticulously crafted world of strategy, action and emotion. The lands are filled with hundreds of unique personalities and dozens of towns and hamlets - and the people are filled with spirit, conflict and honour.
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By Todd Mitchell Porter
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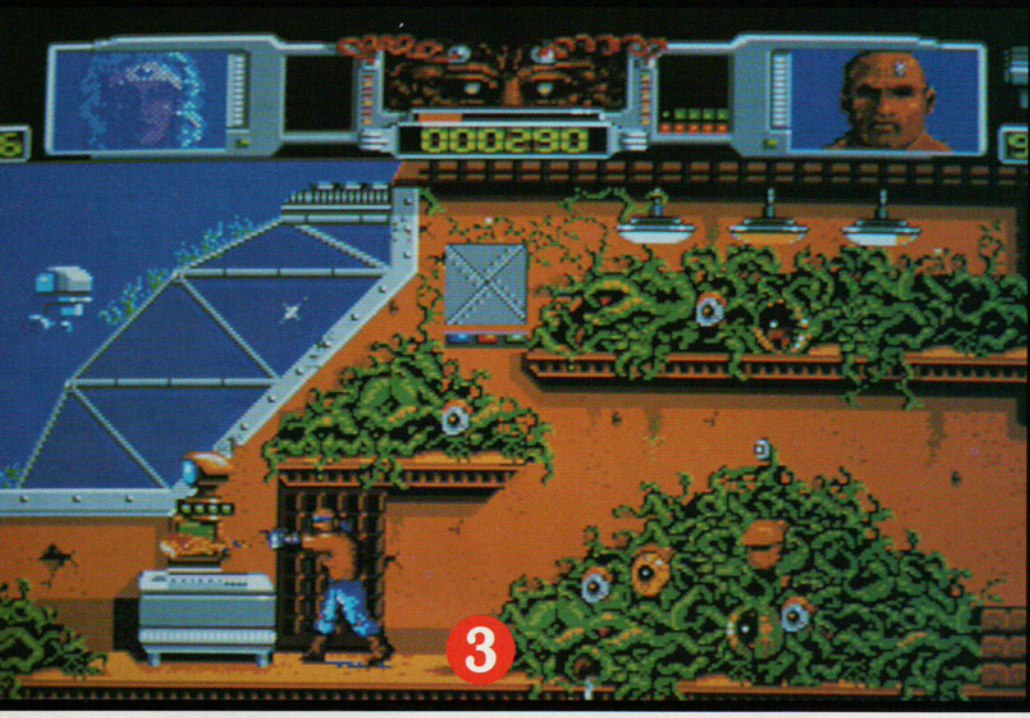


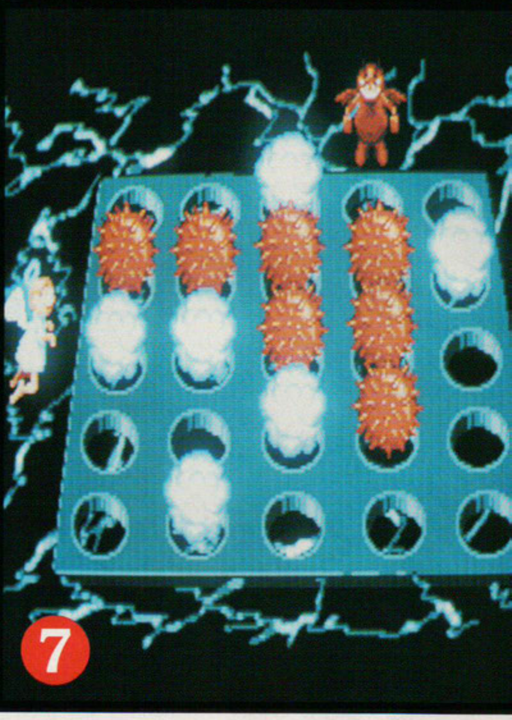












COMING ATTRACTIONS

With software standards rising all the time, will tomorrow's games continue the trend?

ACTIVISION

1 Combining strategy and action and set in the 21st Century is *Warhead*. Earth has been attacked by a load of insect-like aliens and it's left to you to save the world in the FOE '57 fighter which has the ability to travel faster than light. Stand by to take on the 39 missions, and remember, we're counting on you. If you like the action but don't fancy the strategy there's always *Sonic Boom*, a vertically-scrolling shoot-em-up converted from the Sega coin-op featuring everything you'd expect in a modern arcade game.

2 Staying with coin-ops, this time from Irem, but getting away from the shooting is *Ninja Spirit*. This is in the horizontally-scrolling beat-em-up mould as you take the role of a ninja out to destroy an evil warlock. Lob shuriken, wield your Samurai sword and take on wolves, flying kitemen and giant swordsmen.

3 *Hammerfist* is no coin-op conversion. It's set in the future where a corporate body has taken over the planet's two main cities using ultra-powerful holograms. Two holograms (Hammerfist and Metalisis) have fused together and are set on destroying the corporation and hopefully regaining their separate identities.

GREMLIN

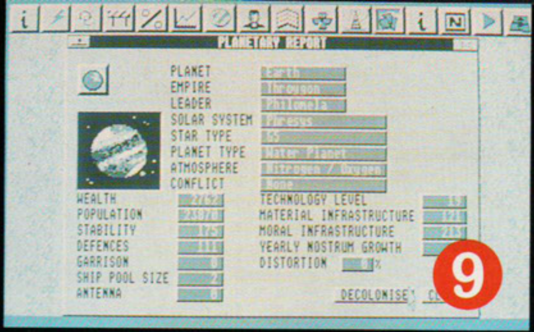
4 When man has killed off most of the environment, the world's ecosystem will be in a state of confusion. Man could always try to develop his own species of plants – but he'd better be careful if he doesn't want things like *Venus – the Flytrap* to evolve. The game's a five-level, multi-world horizontally-scrolling platform shoot-em-up in which the player controls the world's only hope of salvation - a fly. No ordinary fly, but one that can seek out and shoot rogue plants.

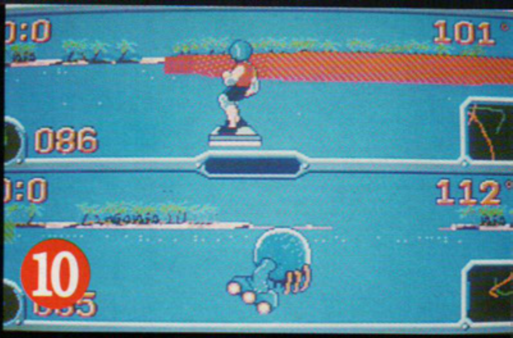
5 **6** And just to keep you up to date, here's how *Skidz* and *Ramrod* are coming along…

ART OF DREAMS

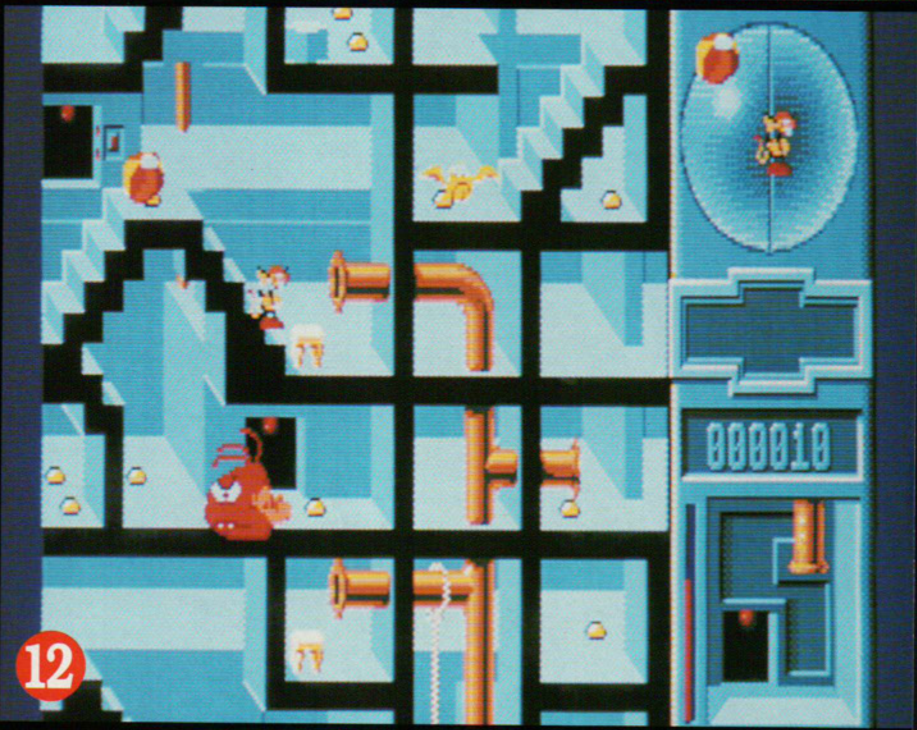
7 The French seem to be creating a software house every month these days,

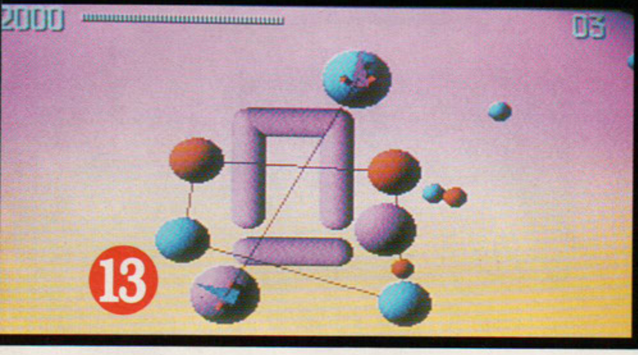
















and this is the latest. The first game to appear will be *Antago*, a simple but addictive strategy game for one or two players. It's a bit like the old Connect 4 game but you must connect five pieces and the other player can shove your pieces around.

ELECTRONIC ARTS

8 Submarine fans will soon be able to get to grips with *688 Attack Sub*. You'll be in charge of a modern American or Russian submarine and there will be 10 different scenarios to play. This was an excellent PC game and should be even better on the Amiga.

Another great PC game that's due soon is the official Indianapolis **9** 500 racing game. More news just as soon as we get it. Strategy fans will be pleased to learn that *Imperium* is on it's way. It's a massive space strategy/conquest game that allows the player to control the economic, diplomatic and military aspects of his empire, or assign them to computer control. This is a biggie so don't expect to finish it quickly!

GONZO GAMES

10 Another new software house and this one's British. The first game looks likely to be *Wipe Out*, which describes itself as "an intergalactic hoverboard challenge". This one or two player game will have you flying around on a hover board leaving a trail of crystals. The idea is to ensnare your opponent in your trail, as a hover board can't cross a trail – a bit like the old *Tron* game.

DOMARK

11 Thanks to Domark's Atari link, Domark have been in constant touch with the Big A while they develop their latest coin-op, *Klax*. It's a simple but very addictive game in which the player has to collect tiles as they roll towards him and then flip them over onto a platform, the idea being to make coloured lines which then disappear leaving more room for more tiles. Simple really.

INFOGRAMES

12 Well, it's finally happened: mankind has been wiped out and a race of small purple rats called *Toyottes* has taken over. As a rat called Cyprian you must move through passages below the surface of the planet in search of the king rat's son. This is actually an arcade game based on Belgian comic The Toyottes.

US GOLD

13 Next up from USG is going to be another Assembly Line game, this one called *E-Motion*. It's a 50-level challenge set in the world of atoms, molecules and particles. You control a single sphere spinning and floating through a kaleidoscope of moving puzzles, multi-coloured orbs and pulsating energy.

LOGOTRON

14 *Cloud Kingdoms* is another simple but addictive game whose lead sprite is a cutesy character from the Japanese coin-op school of design. There are 32 levels to guide the little chap through as he bounces around collecting diamonds and fruit.

15 *Kid Gloves* also features a cute lead sprite, this time in a five-stage platform game with its roots in *Bombjack* and *Rick Dangerous*. Kid has his work cut out if he hopes to return to his home, but those magic boxing gloves he wears may just save him.

'AMOS could be the most successful games-related product ever!'
– Maff Evans, New Computer Express

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'The power of AMOS is amazing, it's so easy to use and the commands are very straightforward. It's got total control over the Amiga'
– A. Kalim, London

'We use STOS to write educational software for the ST – it's very good but AMOS is 10 times better!'
– Jason Salisbury, Prisma Software

'Good luck in producing what looks to be the best utility released in a long while'
– V. Pike, Swindon

'A superb demo... After viewing the disc for nearly two hours solid I picked my chin up from the floor... AMOS is going to be an utter classic'
– D. Chapman, East Sussex

Whether you want to write action-packed games, stunning demos, stimulating educational software or even a database, AMOS is the perfect package for your Amiga.

AMOS has its own super-fast music module and comes with convert routines for Soundtracker, Sonix and GMC. There's even a command called VUMETER which allows you to link animation to sound. You can also substitute a new music routine at a later date if you want – AMOS is that flexible.

Commands like Rainbow and Copper Move allow you to create incredible graphical effects – and they are so easy to use.

You can display any of the hundreds of public domain fonts on screen, and AMOS sorts out the proportional spacing.

Jump to and from Workbench with a single keypress, allowing you to multi-task.

The menu commands have to be seen to be believed: Animated sprites in pull-down menus, the ability for the user to change the order of menu items while the program is running, multi-level menus and more.

AMOS is the package that the Amiga has been waiting for – the first software to unleash the true power of the Amiga to everyone.

But don't just believe what you see here – see for yourself. Send £2 for an exciting interactive demo in which you can try out many of AMOS's powerful commands for yourself! The text files on the disc are full of information too.

AMOS will go on sale in May – later than we planned, but it'll be well worth the wait!

MANDARIN SOFTWARE



Don't delay – send a £2 cheque or postal order and we will send you the AMOS demo disc by return of post.
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Amiga Format review March 1990

As we dont want to upset our competitors, we have not reprinted the benchmark results, but we suggest you refer to the Amiga Format review Issue 8 Page 127.

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HYPER CYBER FUTURES

HYPER-MEDIA? MULTIMEDIA? are they **JUST A LOAD OF HYPE** or **WHAT?** **ANDY STORER** reckons they're **THE BIZ** and here's why...

THE THEORY

You can look at the history of computing as a search for the perfect I/O – put the material from any medium in there, throw it around, process and manipulate it, push it out again. One ultimate day we want to be able to hold intelligent conversations with our machines. In the meantime, they are now quite capable of handling text, graphics, digitised images, and MIDI code inputs with ease.

Talking AIs are still some way off but technology's converging to the point where we've moved into controlling desktop publishing and video. The next logical extension is Multimedia – a whole new world of publishing and presentation. But what do we mean by this term? And why's it set to take the Nineties by storm?

Multi-Faceted

Multimedia is used to denote applications that mix text, graphics, sound and moving video, usually on one format, through controlling hardware that can read, write and drive a diverse range of machinery. CD players, CD-ROM units, Laserdisc devices, videotape recorders, synthesisers, slide projectors – they're all driveable! Maybe not on the Amiga yet but over in the Mac camp developments are well in hand. Sorry to venture into the territory of the Amiga's only real opposition, but the Apple Macintosh platform is one of the best barometers of advances in computing and Apple is investing millions in making sure it's at the core of multimedia.

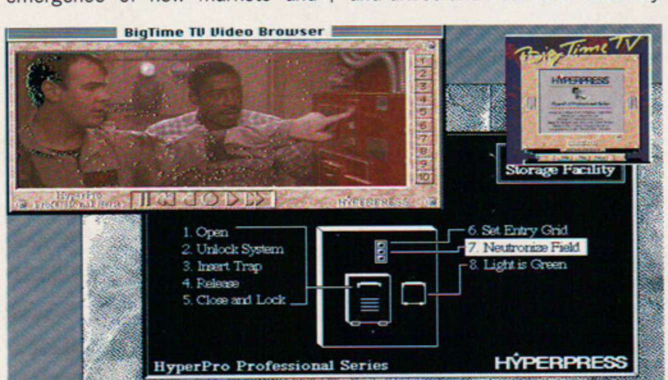
For on the Mac, the future's already here. At the recent Macworld Expo in Boston, Apple chairman John Sculley used a Macintosh IIX to demonstrate three different live video images running in a word-processing document. He was able to scroll the contents of the document up and down and move its window around the screen. The operation took less than three Megabytes of memory and was an effective demonstration of converging technologies. Applications that bring text, graphics, animation, sound and moving video to personal computers will, as with desktop publishing, bring far-reaching effects.

Multiple Choice

This is not simply a question of greater cost-effectiveness or the emergence of new markets and methods of distribution but more to do with a notion central to multimedia; that of interactivity.

For multimedia technology allows a reader, viewer or listener to become a user; able to define, select and alter the material being perused. Whether it's technical manuals or product databases, museum archives or training materials, glossy advertising or home entertainment, a user can extract exactly what he needs, in any order he wishes and react to the publication as if a dialogue were taking place.

The CD-ROM drive is the launch platform for this kind of interactive publishing initiative. CD-ROM disks are the the premier high-density, low-cost storage device; capable of holding over 500 Mbytes of program data: in addition, most also double up as ordinary audio CD players. Mastering and duplication costs are low and drives and interfaces relatively inexpensive. What's more, the choice of multimedia products currently on offer, ranging from educational and training material to technical documentation and interactive leisure products, retail for as little as $60 in the States. As such, the CD format is an ideal starting point for any machine to extend its interface. Applications are principally text and audio based. Although animation and photographic stills have recently appeared on CD-ROM format, video footage remains rare.



Discotechnology

You have to look at the more expensive storage technology of Laserdisc to find interactive applications that incorporate moving video. High quality still and moving images can be stored and accessed quickly from the 12" laserdiscs: typically any one of 55,000 frames can be retrieved in a couple of seconds.

But both CD-ROM and Laserdisc players are read-only optical devices which require masters to be pressed by third party suppliers before mass duplication can begin. They are ideal for applications where the user is essentially passive and not invited to make any alteration to the material at hand. True multi-media is more than just consumer-orientated entertainment or education even though this may include interactive encyclo-paedias, clip video collections and art tutorials.

True multimedia would rely on low-cost, widely available media that can be easily packaged, distributed, consumed and, ideally, customised. We're talking videotape. Videotape running on recorders that can hook up to your machine via a standard interface code. Through this means, it will be possible to integrate video clips with CD audio, text and graphics and 'print' the outcome to the low-cost, widely available medium of videotape.

But in the meantime, the medium term strategy for multimedia lies in support for erasable, high-density storage mediums able to support high-definition television on screen. The key devices here are rewriteable optical disks and Video 8. Both are capable of being written to directly and are able to contain text, graphics, audio and video.

LOOKING FORWARD TO FAST FORWARD

How might you go about working with your Amiga in a few years time if you had about fifteen grand's worth of kit available?

You could produce 24-bit colour photographic slides from your software and control a multi-monitor set-up or arc of overhead projectors to view them next to your own custom screens.

These screens might include imported still and moving video and CD-quality sound and be organised as sequenced productions edited on your desktop. You will have had the choice of using a multitude of image processors, video and audio digitizers and optical recognition scanners to build up these sequences.

You might have included clips of animation, video and audio from the growing bunch of mediabases available and treated them to titling and logos.

You will have a software package developed by the BBC's Interactive TV Unit that enables you to pull in images from Video 8 players, sound and data from CD and CD ROM players, and 'print' the assembled results back to videotape. A range of 24-bit graphics cards and colour overlay boards will have also allowed you to combine television quality images with your own graphics and text.

You'll just hit a button on your Amiga and screen recording software will run the whole show for you. If you want to interrupt the automated presentation you just speak into your Voice Navigator and jump to the next cue. And with the proceeds from your first broadcast-spec production you'll be saving up for your first rewriteable optical disk drive – or maybe you'll be just paying off the costs of buying all that hardware!

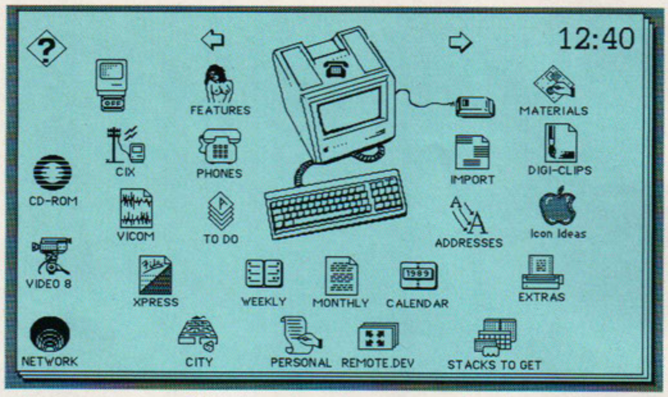
All very sci-fi. All very possible right now – if you own a Mac.So why's Apple ahead and where is the Amiga in the race to catch up?

CUTTING THE HYPE...

The potential for multimedia applications started with *HyperCard* on the Mac in late 87 – a multi-purpose program with endless possibilities that set the style of software to come. *HyperCard* provided an even friendlier interface than the Mac desktop, a busy little 'home' card acting as the centre of operations for everything from appointment diaries to spreadsheets to animation. Icons and buttons battled it out for control over a bewildering variety of databases known as 'stacks'. You could even load in all your favourite applications from within *HyperCard* and return to base when you'd finished. The potential was enormous – bright, moving graphics side by side with dull, stolid business.

Hypercard's secret lies in its Hypertalk command language. Such is its simplicity that you can roam the program all day without ever needing to use the invisible language underpinning it.

Apple recently stepped in to help matters along by announcing its Apple Media Control Architecture. The AMCA will provide a framework for all applications to access videodisc players, CD-audio players, videotape recorders and other media devices via a standard interface code. As such, it'll be possible to integrate video clips with CD audio sound, manipulate the two elements and 'print' the outcome to videotape. ■



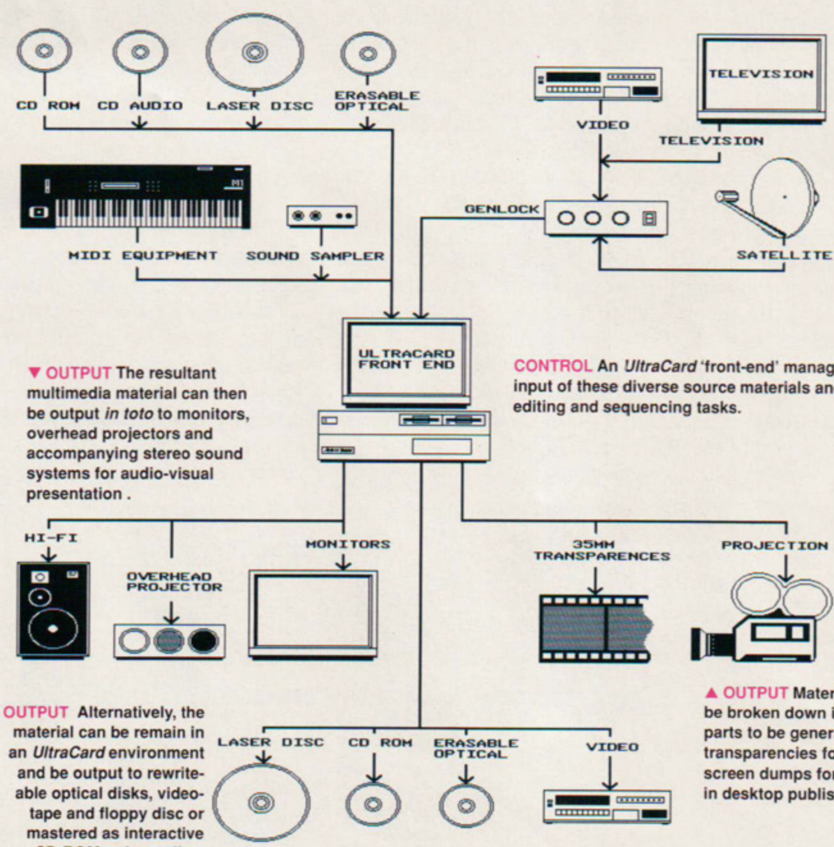
***Hypercard:* a busy little 'home' card acts as centre of operations.**

A FUTURE AMIGA MULTIMEDIA SYSTEM

A future Amiga multimedia publishing system would consist of three interconnected elements: control, input and output. Although any Amiga with a hard disk can run multimedia control software like *UltraCard*, souped-up A2000s will be ideal as they offer more memory and speed.

▼ INPUT Source materials from CD-ROM, CD audio, Laserdisc and rewriteable optical disks will be imported via a common standard based on A-Rexx interfaces and combine with digitized audio from sound samplers and MIDI instruments connected to serial ports and MIDI interfaces.

▼ INPUT Live and recorded video, broadcast television and satellite transmissions will be incorporated into the Control device via a high-quality genlock card which effectively allows video sources to be synchronised with and overlaid on the Amiga's screen display.



CONTROL An *UltraCard* 'front-end' manages the the input of these diverse source materials and controls editing and sequencing tasks.

▼ OUTPUT The resultant multimedia material can then be output *in toto* to monitors, overhead projectors and accompanying stereo sound systems for audio-visual presentation .

OUTPUT Alternatively, the material can be remain in an *UltraCard* environment and be output to rewriteable optical disks, videotape and floppy disc or mastered as interactive CD-ROM or Laserdisc.

▲ OUTPUT Material could also be broken down into component parts to be generated as transparencies for projection or screen dumps for incorporation in desktop publishing.

THE PRACTICE

So there are two key elements to any multimedia system. First, a common interfacing code that can link a computer to a range of recorder/players and read or write data to those devices. Second, a simple means of controlling all these input/outputs in a user-friendly way. Both these will be needed before Amiga Multimedia can become a reality...

1 ..AND UNDOING THE ULTRA

UltraCard is the first release for the Amiga that serves as a means of achieving the second key element outlined above. Since Jason Holborn gave it a full review last issue we don't need to go into too much detail here except to underline its role as a 'multi-tasking hyper-media information construction set'.

So although it is a form of programmable relational database it goes beyond this to provide a system whereby previously incompatible programs can be made to communicate to one another in such a way so as one can indirectly control the other. As such, complex linkings can be effected that cross media boundaries. *UltraCard* achieves this by using stacks composed of frames which can hold graphic, audio and textual information, all highlighted by activating 'buttons' that control linkages to other applications in the system.

UltraTalk is the name of the underlying scripting language and it utilises A-Rexx to call in and issue commands to external programs. Unlike *HyperCard*, *UltraCard* does not directly provide the drivers necessary to control external storage media since there are no such agreed standards for the Amiga. Instead it opts for the only thing that comes near, the A-Rexx system, which depends on the external devices being A-Rexx compatible.

While new software like *Digi-Paint 3* and *Cygnus Ed* are A-Rexx compatible and the standard itself will be built-in to Workbench 1.4, we really require hardware compatibility as well. What's needed on the Amiga is a means of interfacing to the High Sierra and ISO file formats comprising the bulk of CD-ROM players and file information. In the meantime the only devices which will have A-Rexx compatibility built-in are likely to be Commodore-badged products. Not a very healthy state of affairs.

In the meantime, though, there's DDL's re-badged Sony erasable optical disk which opens up the arena for the kind of mass storage required to contain digital video sequences. The DDL drive is completely AmigaDos compatible because a SCSI device is simply treated like a hard-drive. Also on the cards from an unnamed source is a CD-ROM drive for the Amiga though you'll have to wait for more details on that one to emerge.

2 INTERACTIVE AMIGAS

The lack of interfacing standards hasn't stopped certain companies going out and writing their own custom versions. One such developer is Ariadne Intertactive. Ariadne's background is well suited to the area of multimedia production since they've been supplying software for Rendale and Applied Systems genlocks for years. 1988 saw Ariadne release its Ariadne Amiga Authoring Environment (AAAE), a range of authoring tools for the creation of interactive trainig and presentaion programmes.

AAAE is a multi-tasking environment consisting of software tools, devices and independent programmes to interface and integrate the Amiga's graphics, sound and windows and WIMP capabilities as well as providing peripheral support for touch-screens, laser or tape players, modem links, genlock interfaces and printers. The system is used in Point of Sale and Information and Training applications. The National Physical Laboratory, British Aerospace and the Immigration Office are among the its users, as are GCHQ,(not much chance of us doing a feature on that one!).

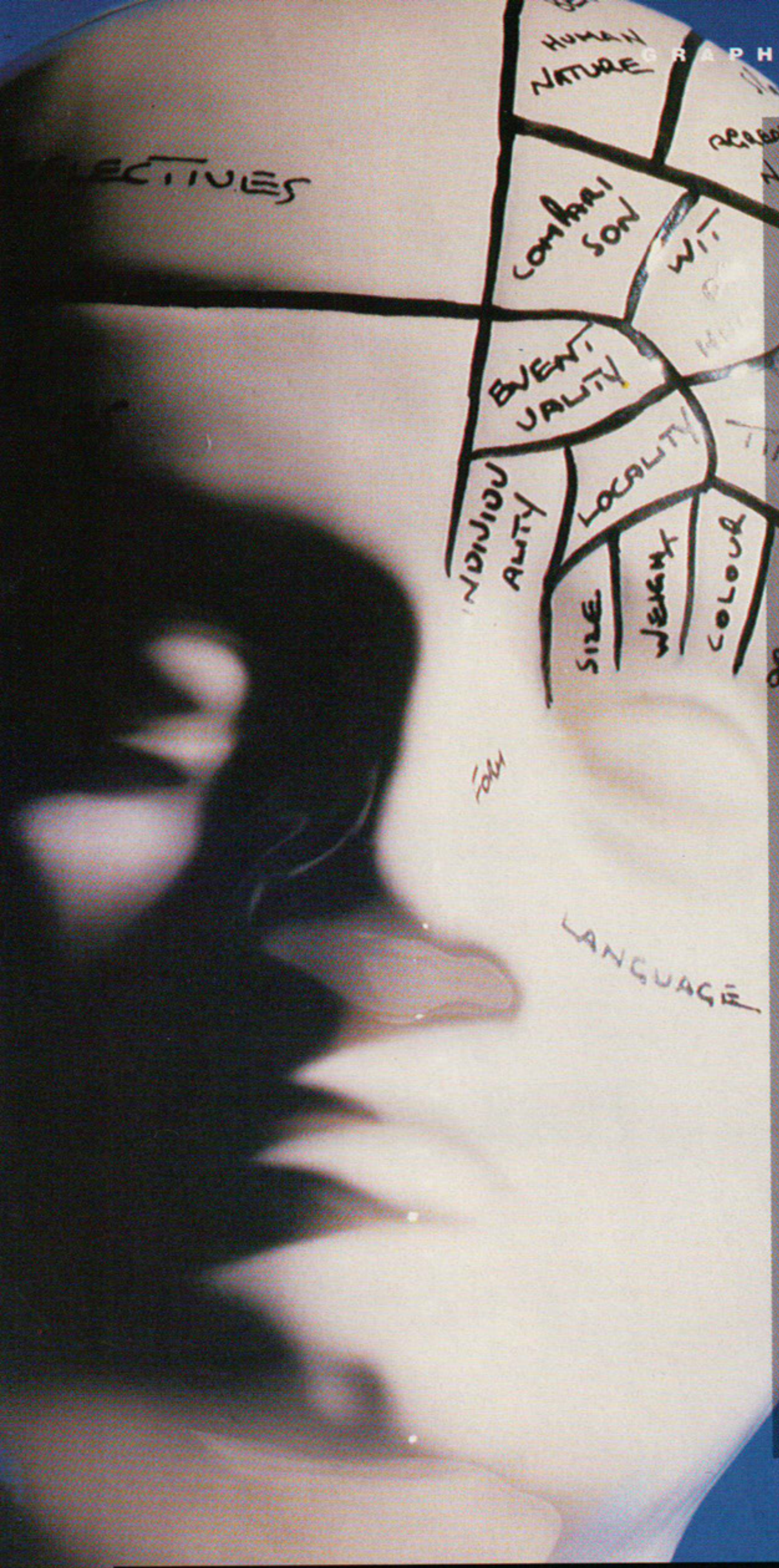
Ariadne is now working on an upgraded system that will allow multi-player support to interface Amigas to up to nine laser disc and VHS/U-Matic video decks. Using 3 meg 2000s with 68020 cards and 40/60 Meg hard drives, the controlling hardware is ideal for multimedia applications since the multi-tasking capabiliites means there are no wait states while commanding external devices to find and load in video sequences. It's in its mutlirtasking that the Amiga's potential for multimedia lies – Apple and IBM can't touch it. Moreover, Ariadne go so far as to claim that their interactive Amiga authoring systems allow information providers to get a product up and running for a third of the cost of competing formats.
Ariadne are on 01 222 8866.



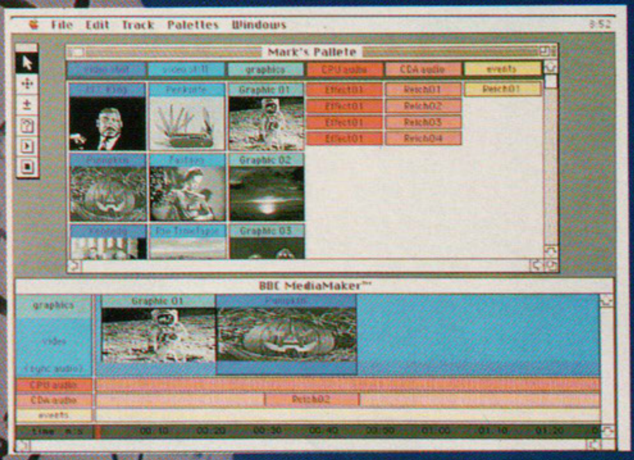





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RAF Pilot Officer Boggle Bodie
"Even in the heat of the moment I well remember my amazement at the shattering effects of my fire. Pieces flew off his fuselage and cockpit covering, a great stream of smoke appeared from the engine and a moment later a great sheet of flame licked out from the engine cowling and he dived vertically."
RAF Pilot Officer David Crook.
Screen Shots from IBM PC Version.
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"There were about twelve Me 109s diving at me from the sun and at least half of them must have been firing deflection shots at me. There was a popping noise and my control column became useless. I found myself doing a vertical dive, getting faster and faster. I pulled the hood back. I got my head out of the cockpit, and the slipstream tore the rest of me clean out of the machine."
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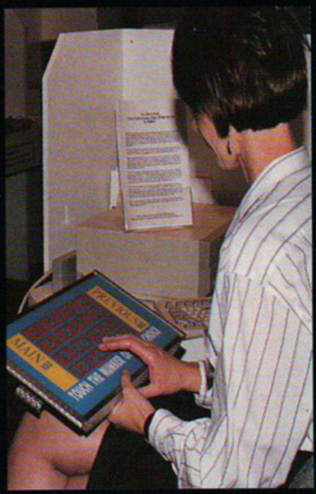
4 MAKING MULTIMEDIA



Could this be the sort of enabling software we'll see on the Amiga?

Controlling external devices and providing an easy-to-use front end for navigating their vast storage potential is one thing, but when it comes to actually producing a multimedia event you need more specialised software. Several diverse developers have already begun exploring the potential of multimedia enabling applications. Most prominent among them is the BBC with its *Mediamaker* package. Could this be the sort of enabling software we'll see soon on the Amiga? Mediamaker is a software application based on the *HyperCard* clone *Supercard* and developed by the BBC's Interactive TV Unit and Apple. It's described by its authors as a "Word processor for Multimedia" and is a visually-based editing system that can sequence still and moving pictures and synchronise them with sounds. Thus, material from videodisc, Video 8 and compact disc can be combined with Mac graphics packages to produce stand-alone sequences which can be 'printed' to videotape. To assemble a sequence, source materials are broken down into picture icons or 'picons' which can be played and edited to length. Picons are then dragged into the 'track' window below the main display which has separate channels for video and audio output. With a minimum of 4 Mbytes of RAM it's possible to create and view sequences of up to ten minutes duration. To accompany *Mediamaker*, the Beeb is also producing the Mediabank series of Video 8 tapes: collections of clip video culled from various broadcast programmes.

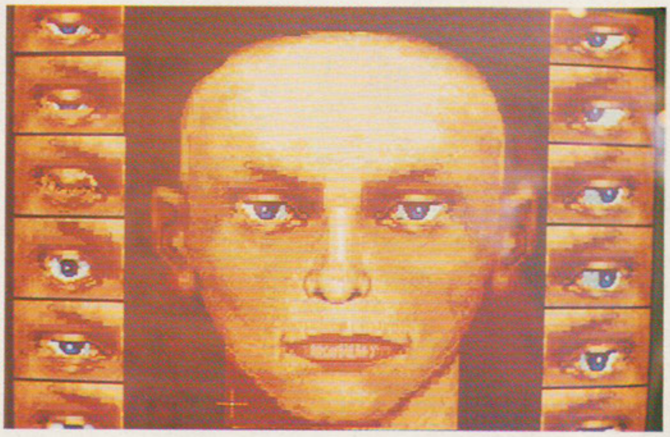
3 DISCOVER DISCOVER



Xebec's Discover is an interactive information system running on A2000s which can assemble thousands of pages of text, graphics, digitised pictures and sound, animation and video or any combination of these media. Like Ariadne's system it's an easy-to-edit authoring environment that allows information providers easy access to customising output as and when it needs upgrading. Authoring is achieved through pull-down menus and requesters allowing series of pages to be built around the modular environment so that differing media data can be easily added. Discover's mainly being used in tourist situations; museums and leisure parks. One Discover system, based at the Barbican's Royal Britain Museum, combines photographs, graphics and text in a fifteen-minute programme simultaneously displayed on ten monitors. This exhibit is completely Amiga generated and runs off hard-disk - replacing the existing laserdisc system.

Discover normally utilises either touchscreen or keypad interfaces and includes two monitors – one for authoring, one for display – and either a videodisc player or VTR with Rendale genlock. The system is very low-cost compared to PC or Mac systems, making it ideal for public funded installations like the one at the Manchester Museum of Science which features animated digitised sequences.





Left: The Simian, an intelligent assistant who can guide a user through the depths of mass storage devices.

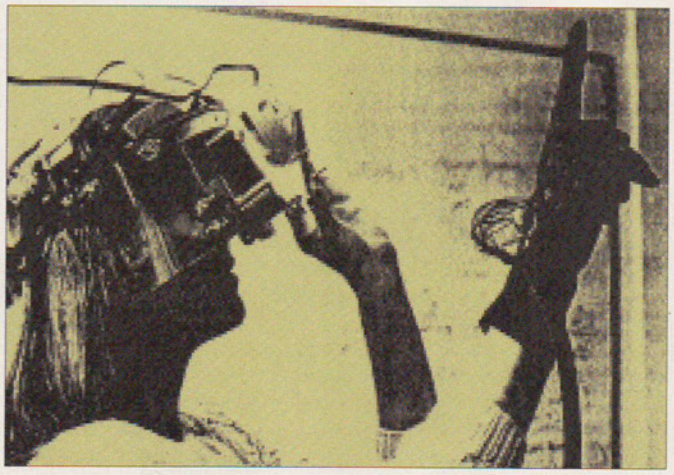
MULTIMEDIA AMIGA

So, is there any reason why multimedia should be confined to a Macintosh environment? The answer is a qualified no. Although machine architectures and I/O are sufficiently similar to support interfaces for the range of media devices in question, what's crucial is the operating environment on hand. Top priority must go to the amount of RAM you have on board plus the requisite masses of hard disk space. A ten-second video sequence can eat up 2 megs in no time at all. And then there's the question of control of all that diverse data through some flexible front-end. The Mac's always been streets ahead in terms of the way it provides a virtually idiot-proof environment. It's fast, reliable and, above all, ridiculously easy to run any number of the packages released for it. They all conform to the same menu operations. With the Amiga the situation is less straightforward. But it's development support that's the key here - for at the end of the day, the chips in Macs and Amigas are identical - all that's needed is the will to plot the way ahead.

Since the Amiga is well catered for in terms of digitzers, genlocks and sound handling, this will undoubtedly open up the field of multimedia applications for Amiga owners. The machine is already being used for Desk Top Video and interactive training so the groundwork has already been prepared. The Amiga 2000's open architecture and high RAM capacity make it the ideal contender. So the arrival of *UltraCard* is great news indeed as it opens up the possibilities for multimedia by providing a common front-end for all future applications.

BEYOND MULTIMEDIA....

But if you want to go really sci-fi about the Amiga's potential then you need look no further than the field of virtual reality and the pioneering work being conducted by AutoDesk and VPL in California where data-gloves and dual micromonitor headsets transport users into computer-generated virtual worlds. Although these systems use banks of fast 386s and a minicomputer, the interface is by no means arcane. Fibre-optic sensors strung along the inside of the datagloves relay hand movements and positions as digitial code that updates the stereoscopic images being output through the headset. The idea is to develop virtual environments with which users interact. One VPL simulator has a minicomputer connected upto a exercise bike which you pedal. The headset view creates a street scene in which you're steadlily cycling faster and faster until you reach 200 mph and leave the ground. You're then able to circle around leaning from side to side to effect turns. Not exactly cyberspace, but on the right lines. Obviously this kind of sim requires realism and that calls for a helluva lot of raw number crunching.



Right: Beyond multimedia and into virtual reality: cyberspace.

...AND ON TO THE NEW HYPE

Talk of cyberspace realities and the programming and hardware needed to realise them is all the rage at the moment. A new information resourceof interest to Amiga owners, *The Cyber Times,* has recently been set up in London for anyone interested in pushing the boundaries of the possible. It's Europe's first news utility for multimedia and beyond and is available on annual subscription for £15 from 90A Devonshire Road, London SE23 3SX. Otherwise, even traditional retail outlets are beginning to venture into the possibilities which are afforded by the Amiga.

"We're five years away from a multi-million dollar multimedia industry – the Cyberspace industry". So says Cyber Joe Caxton, one of the team based at Track, the well known Amiga mail order and retail firm, talking about the company's product-in-the-pipeline CyberPad. "It's a set of tools to allow people to build cyberspace realities – anything from games to sims to remote reconaissance." To this end, Track are working on a set of utiliites that will allow the Amiga to draw on multimedia material and incorporate it into virtual systems. At the moment a front-end is under development which is based on the concept of an 'agent'.

Agent Simian

Cyber Joe calls his agent Simian and describes the interactive character as an intelligent assistant who can guide a user through the depths of mass storage devices – multitasking his/her way through folder upon folder to deliver a file, application or virtual environment to the user.

Cyber Joe's been working on CyberPad for 8 months now, experimenting with the possibilities of A-Rexx, and reckons he'll need another year to crack it. But he remains undeterred by the fact that the likes of Autodesk and VPL have spent millions on developing their virtual systems and require mini-computers to run them. "That's not important, what's needed are the interafaces, the hardware will follow...and the Amiga's ideally suited to provide it."

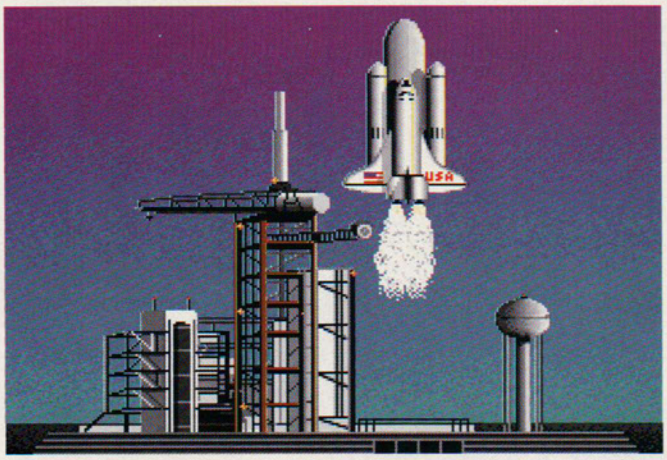
Why not Ultracard?

So is *UltraCard* not the answer? "*UltraCard* needs to be scripted: what we want to do is provide a system that doesn't need any programming whatsoever. Simian will take care of all that". Joe's obviously got a lot of work on his hands though. Working with C++ he has to produce a completely interactive computer personality. Not an easy task. So the project will be introduced in stages.

First off the blocks is an intelligent clip art disk – the" Lifestyles" disk – closely followed by a game, *Void Comp.* This takes the Blade Runner scenario of having to identify replicants by interrogating characters and the programming is based on the work going into the Simian agent. The object is to identify replicants by asking them anything up to 100 questions and then blow them away. Wrongly 'retire' a human and it's curtains for you.

Lastly, Track will release the full Cyberpad utilities after a series of developer's disks. They wish to attract musicians, programmers and video producers to work with them on defining this form of the future. "People are becoming hardware obsessed", concludes Joe, "what we need now is an awareness of the ideas behind virtual reality now." So as with Autodesk, for Cyber Joe "Reality's not enough anymore". ■

BRIAN LARKMAN's full review of *Deluxe Video III* follows last month's brief look.



THIRD TIME Deluxey?

The original version of *Deluxe Video* was one of the first animation packages on the Amiga and right from the start it showed the potential of computer animation on a micro in a way that nothing had before. In spite of its easy interface it was quite complicated to work with and only used a maximum of 16 colours in low res, but it was still wonderful in the most literal way. Now version 3 is here and though it still uses the same interface, it is an all new and much more powerful package. It claims to be *Deluxe Video* – is it Deluxe and is it Video? This is where we find out!

What It Does!

Deluxe Video III is, in effect, a powerful animation sequencer. It has a simple, straightforward interface that allows the user – the 'director' – to bring together bits of animation from a variety of sources and paste them together. Full screen (or even larger) pictures and animations can be wiped, faded or slid into view in a wide range of ways, providing opening and closing sequences and transitions from one scene to the next. Brushes and AnimBrushes (from *Deluxe Paint III*) can be directed to move on, off and about the screen along straight or irregular (and editable) paths, animating as they go. Brushes with their own looping paths can be attached to other brushes to create hierarchical object motion.

Larger than full-screen pictures (super-bitmaps) can be scrolled to give a panning effect – especially convincing if a brush is animated in the foreground. All these transitions and effects are timed down

WHY VIDEO?

In many ways the use of the word 'video' in the name *Deluxe Video* or even Desktop Video is just a metaphor, likening computer graphic images to those created by video techniques.

The two media are nevertheless closely linked – video images or moving sequences of frames can be grabbed or digitised and used in computer animations, and these animations can in turn be recorded back to video for storage, further editing and playback on the more widespread and universal medium, television.

The video and TV industry is itself using computers and digital systems increasingly to add variation in the range of special effects available. At the top of the market, digital editing using systems like Quantel's Harry has established itself because it is much more like film editing than the current video editing techniques and therefore gives back overall control of the final product to the designers and directors. It is at this point that the metaphor breaks down, for video at this level *is* a computer medium.

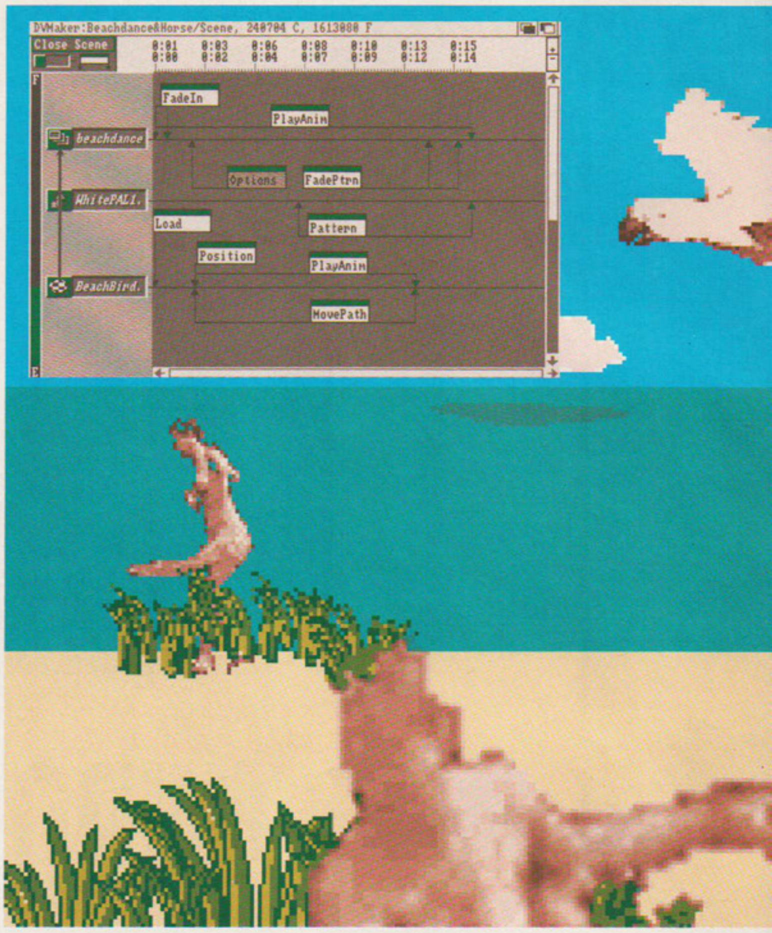
At the bottom end, *Deluxe Video* is also a means of editing. 'Scenes' and 'Videos' produced by *Deluxe Video* do not need to be recorded onto videotape: they are designed to be self-sufficient within a computer-based medium. By using tracks, time-lines and effects boxes, every sequence, transition and effect can be fine-tuned and varied to suit the director's wishes exactly. In effect this is digital editing, or to use an analogy from computer music, 'video sequencing'.



Right: This is the first Scene Script of a two scene 'video'. Scene 1 deals with wipes and fades. The first scriptline is the anim BeachDance. This is Faded in right at the beginning and the PlayAnim effect, also at the start, means that it will be animating as it appears. Beneath the line are Option and FadePtrn effects. These operate with the second scriptline, WhitePAL1, a Picture Track inserted just for its pure white palette.

The FadePtrn effect on the line above ensures that the Anim will fade to the palette of the track with the Pattern effect, in this case all white. This is the only way to get anything to fade to a colour other than black. The Option is set to Restore Pattern. With this operating, any brush or animbrush that passes over the background picture will wipe away the pixels it passes over, revealing the picture that is the 'pattern'. In this case it was just white but it could have been any image.

The bottom track is an AnimBrush, BeachBird. This is positioned off left of the screen with a Position effect, ready to move across the viewport. A PlayAnim ensures that it will be animating. The MovePath effect beneath the line defines the path that the bird will take as it is buffeted by the wind. Setting this effect brings up a requestor that allows the path to be drawn as a series of linked points.



to a 50th of a second and can be matched with sound effects and music to the same accuracy.

What It Doesn't!

What *Deluxe Video III* does not do is create any of the artwork that it uses. All of the pictures, anims, brushes and animbrushes that you might need to build your video, must be created in the correct IFF format using other programs – with the one exception of anims created using the MakeAnim Effect – see below. The perfect combination for most uses other than HAM mode is *Deluxe Video III* and *Deluxe Paint III*, but any paint program can be used for pictures and brushes, and any animation program for anims, provided they use the IFF standard for files and Sparta ANIM format for animations. There are some serious limitations of compatibility even within the IFF and ANIM formats but these can usually be overcome with care. The problems of compatibility are described in the box 'When is a Standard Not?'

Into The Interface

The least changing aspect of *Deluxe Video* is its interface. Anyone familiar with older versions will still be completely at home and pleasantly surprised at the few subtle changes.

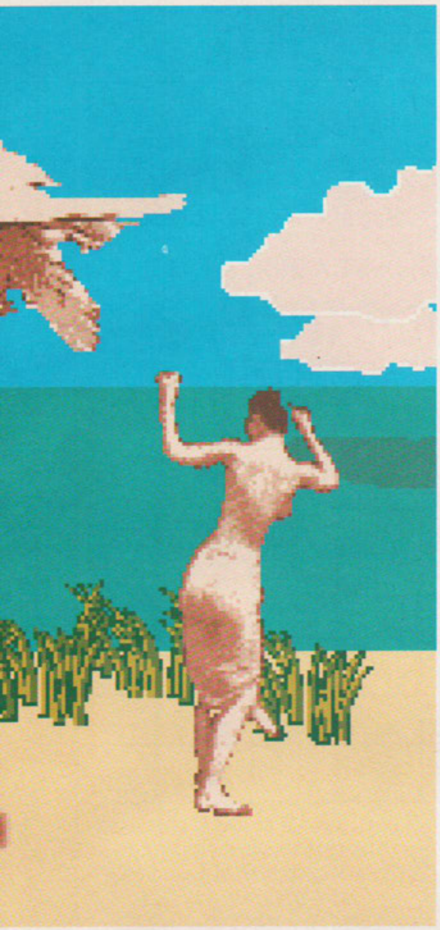
Two types of window or 'script' can be shown. The Video script displays a high-level description of the whole animation (known as a Video); the Scene script shows the detailed events in each section or Scene. All elements of the animation are displayed as parallel time-lines known as Tracks running with time from left to right across the screen. A ruler showing approximate times is provided across the top of each window and a gadget at top right can change the intervals displayed at a click. On the Video script, each scene is shown as a Scene Effect box, with two flagpoles attached to the timeline to mark its start and end. Double-clicking on this box opens the scene script where most of the work takes place.

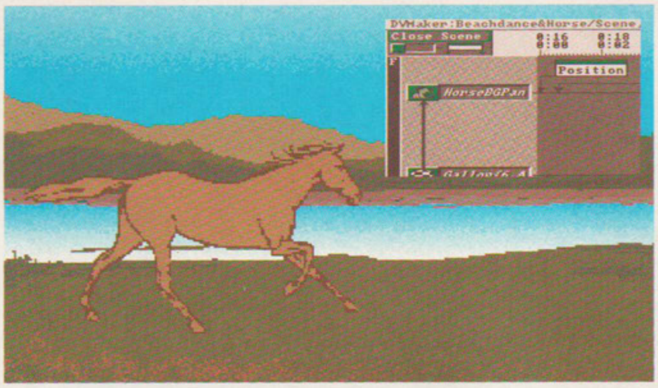
The simplest scene is just one track – usually a picture or anim – with one effect – perhaps a Fade-in or Wipe – to make the image visible. If an object, maybe a brush of some sort, is to be added, this will also require a track and several effects to position it at the start of the scene and then move it. When each of these tracks or effects is pulled down from the add area, a requester will appear to determine the type of effect and the way it will work. This hierarchical structure, video script leading to scene script leading to effect leading to requester, makes *Deluxe Video* easy to operate and straightforward to understand. At no time is the whole video structure displayed, but this is an advantage: no good film director would try to visualise the whole film in all its detail at once.

Timing

Although the whole ethos of *Deluxe Video III* is that it should provide 'real-time' playback of its animations, effects and sounds, the speed of playback can be greatly affected by the size of the parts in use at any particular time and the mode they were created in. Large ANIM animations with big AnimBrushes operating in front of them can slow down the action considerably and if colour-cycling scrolling backgrounds are used as well things can almost stop, which plays havoc with the timing of music and sound effects. Moving any sort of brush in front of a HAM picture causes fringes to appear. These can be cured (in expert mode) using the HAMFixup effect, but once again real-time operation is slowed to a snail's pace.

All of these problems can be solved by one of a series of strategies described in the good, but not excellent, manual. The best solution to most timing and HAM fringing troubles is to convert the





HorsePAN is a much simpler sequence lifted direct from the excellent *RealThings – Horses* package (RGB Studios/Digipro). For anyone who has little artistic skill but wants to use *Deluxe Video III* to the full, this package is invaluable. Of course it was originally intended to be used with *Deluxe Paint III*, but it is ideal for other programs that also support anims and animbrushes.

Having faded to white in the previous scene, this one needed to start with the same colour. Instead of another fade, a vertical pan is used. The picture was modified in *Deluxe Paint III* so as to be 512 pixels high. The extra was added at the top with a gentle gradient from cyan at the horizon to white over the whole upper half. A Position effect on the picture track ensured that the top half was visible in the viewport at the beginning of the scene. A Scroll effect is set so that the picture moves upwards, revealing the lower section in the viewport as a downward pan. The timing needs to be exact so that the scroll stops just as the picture comes to the bottom. Exactly at this point another Position effect locks the picture in place

The horse animbrush was loaded early in the scene to avoid a hiccup in the scrolling. A Position effect places it just off screen to the left and a MoveTo effect moves it across and out of view, galloping courtesy of Cecil Trew and a PlayAnim effect. With a larger background picture it would have been possible to scroll across the screen, with the horse galloping on the spot but appearing to be moving in the centre of a 'pan'. There is an UnScroll effect available to stop the brush following the picture as it scrolls past.

action into one ANIM using the MakeANIM Effect. In simple terms this is just an effect that is stretched over the most complex part of the scene. When the scene is played, the difficult bit is saved to disk as a series of complete screens and compressed into an ANIM which can then replace it in the script. If the changes are large and/or a HAMFixup Effect is involved the MakeANIM process can be as slow as a tax refund but it is worth the wait because it often smooths the movement.

Conclusion

If a computer graphic system is to replace or even simulate true video at both the recording and editing stages, it must be able to do several basic things that are the foundation techniques of all video work. It must zoom and pan, pull focus, fade to black or any other colour, dissolve, and wipe with a range of effects. *Deluxe Video III* can achieve most to some degree and do several well.

It cannot zoom except by changing the size of its viewport (the window that you view the images through). This is a bit of a cheat and nothing like a true video or film zoom. Only one software zoom is available at the moment and that is on *Animation:Stand* from Martin Hash. This is supposed to save in the ANIM format, so it should be easy to include a true zoom as one scene in a 'video', but nothing is ever that easy. *Animation:Stand* also provides a means of panning around a picture once you are zoomed in, but *Deluxe Video III* achieves the same effect more convincingly simply by panning smoothly across a 'super bitmap'.

'Pulling focus' traditionally involves changing the focus from a near object to a far one or vice-versa and assumes a fairly shallow depth of focus. A similar effect can be achieved by hand using a stencil and the Smoothing mode in *Deluxe Paint*, as you can see with the foreground figure in "BeachDance&Bird", but it is a laborious task. Fade to and from black or any other colour is easy and so is a range of wipes, slides and other effects. Even complex turns and 3D effects could be incorporated using the DVEs of *AniMagic* from Aegis. Dissolves from one picture to another are easy but not very effective because of the large pixel size. For this one effect a genlock and videotape are essential.

Remarkable as it is for the price, the Amiga is still far from perfect. Whatever high tech system you are using – Hi-Fi, photographic, Midi – there is always something just a bit better: but with the Amiga just one more level of improvement in resolution and colour would provide a great reward in realism and quality. The Amiga cannot provide this without becoming a lot more expensive and sacrificing much of its speed and animation power. The same thing is true of most other micros, even the much-desired Macintosh which cannot animate as fast as the Amiga with just 8-bit colour, let alone 24-bit. Unfortunately it looks like we are still waiting for enough power to give us true, photo-realistic animation on a micro. Roll on the Amiga 4000!

If the hardware cannot be improved much, then it is to software that we must look for higher quality and easier interfaces. Unfortunately these two ideals are mutually exclusive. Easy interfaces use up vital chip RAM and slow down the animation. Fast, smooth, efficient animation is best achieved by more formidable script based systems like *The Director* from The Right Answers Group. Nevertheless, *Deluxe Video III* goes a long way towards providing the ideal interface for putting together sequences of animation without slowing things down too much. In combination with *Deluxe Paint III* it's the best there is. Deluxe and Video! ■

WHEN IS A STANDARD NOT?

Considering the basic standards of IFF for pictures and ANIM for animations that have become commonplace within the Amiga graphics world, it is sad to be forced to this: but you should be aware of problems with the programs you will be using. *Deluxe Video III* and *Deluxe Paint III* work well together, using common picture and anim files. Other programs are not so accommodating.

Sculpt3 and *4D* (from Byte By Byte) have a completely different ANIM standard. It is more efficient, producing smaller, faster-running ANIMs, but they cannot be edited or used by any other program. *Interchange* from Syndesis can convert them but it is probably easier to take raw IFF renders and load them into *Deluxe Paint* to make a standard anim. (If they are HAM pictures use *Photon Paint 2*). This is a good practice with any rendering system that produces IFF pictures before it compresses them – once they have been compressed by *Deluxe Paint* you are sure they will work.

Unfortunately there is one problem to be overcome first if the pictures are overscan. *Deluxe Paint* will only accept overscanned pictures in an anim if they are in its own size limits, so make sure they are exactly right or don't bother with overscan. Each frame can be loaded into the Scratch screen and the size changed and then re-saved, but its a long job on a 200 frame animation.

There are many other compatibility problems to be overcome but the most immediate ones are those mentioned here. There are many more to be found I am sure.

WIPES AND FADES, ANIMS AND ANIMBRUSHES

It's only when you start to use a program that you find its faults. Although the publicity gives the impression that almost any Anim or picture can be wiped or faded into any other, the truth is more complex. By trial and error some rules begin to emerge:

- You cannot WIPE from one picture or anim to another in the same scene without a black gap between them.
- You can WIPE from one anim or picture to another in consecutive scenes.
- you cannot WIPE in an animation that is moving.
- you can SLIDE in a moving anim.
- you can FADE a moving anim.
- you can only FADE in or out, to and from black except in the case described below using FADEPTRN.

This will all seem like gibberish until you start work but it means that it's best to just use fadein and fadeout for anims and animbrushes and leave the fancy wipes for pictures.

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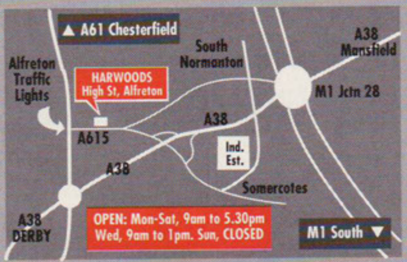


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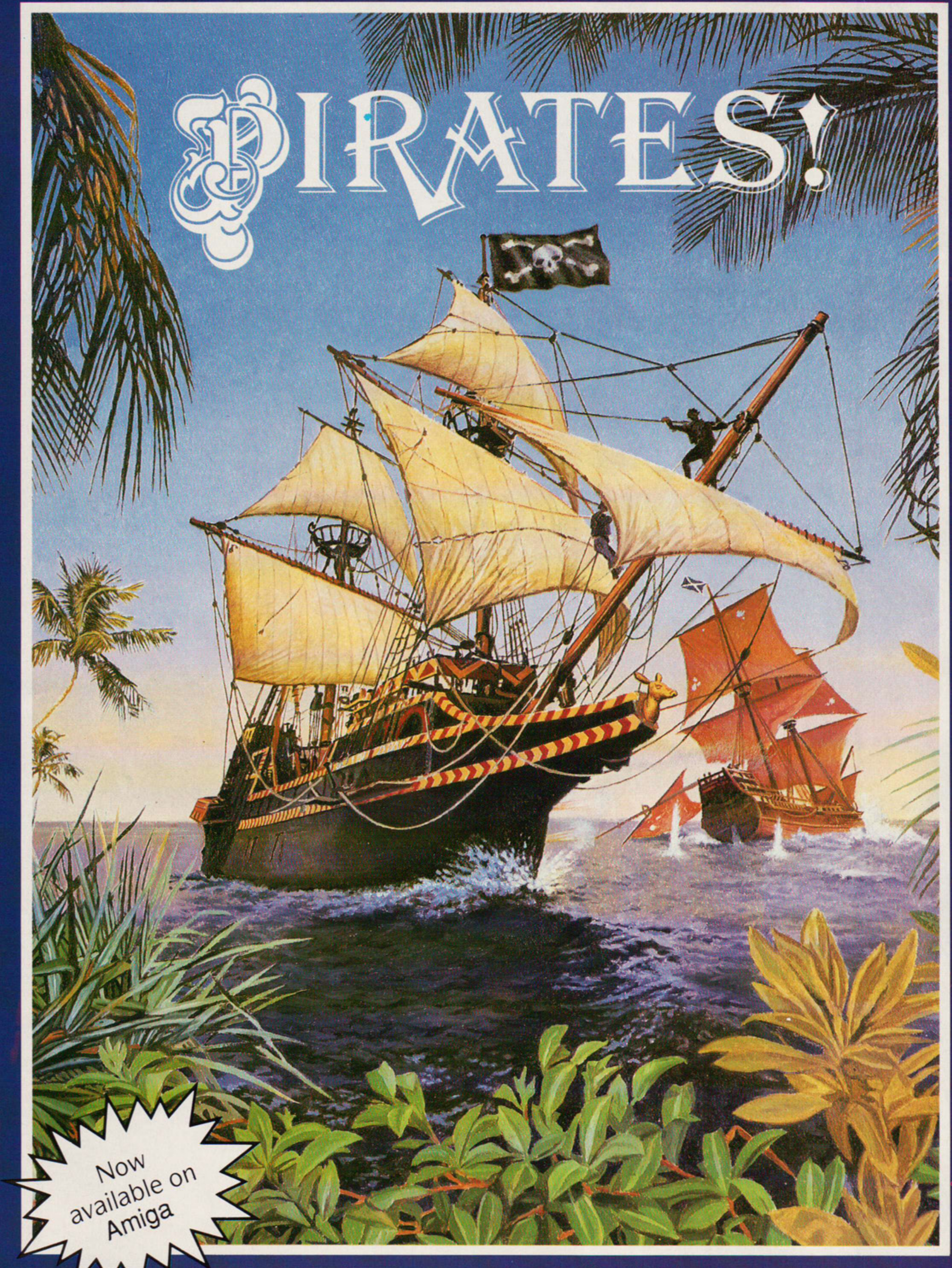
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PIRATES!
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GOOD GAME, GOOD GAME...

All right, Luvvies! Nice to see you...! Right, you now have thirty days to read your way through the next fifteen fun-packed pages. Remember, you could take home all the games you see... so if you're ready, we'll begin.

"Errm... CONQUEROR, FIGHTER BOMBER, DR PLUMMET'S HOUSE OF FLUX... errm... DRAGONS BREATH, CONQUEROR"

"Yeah, we've got CONQUEROR... did you say KNIGHTS OF THE CRYSTALLION?"

"KNIGHTS OF THE CRYSTALLION... PIRATES, RISK"

"FIGHTER BOMBER?... Oh yes. The CYCLES, don't forget The CYCLES... or DRIVIN' FORCE... or the TEASMADE."

"Errm... OVERLANDER... Demon something"

"Yes, DEMON'S TOMB... and PIPEMANIA"

"Cabal... oh... errm... FIRE, Rotisserie... I mean ROTOR...and the cuddly toy!"

Beep, Beep, Beep.

"Time's up... let's have a look and see what you got... didn't they do well!"

THE RATINGS EXPLAINED

GRAPHICS
Good graphics are an important part of any game: if the power is there, it should be used to the full. Both static and moving graphics come under scrutiny in this rating, but remember, graphic wonders alone do not a great game make...

SOUND
With stereo capabilities the last thing you want to hear are Spectrumesque beeps, right? Title tunes and effects all add to the atmosphere of a game and good sound can greatly increase your enjoyment.

INTELLECT
How much real thought do you have to put in to play the game? Just because a game is mindless doesn't necessarily mean it's bad, but a game with a high intellect rating says immediately that you'll need to think to gain maximum enjoyment.

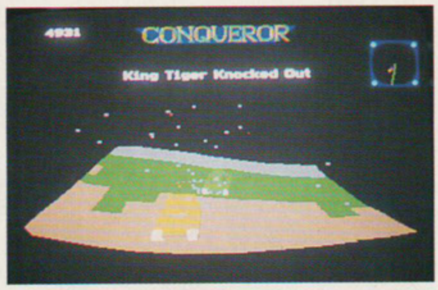
ADDICTION
How easy is a game to pick up and play? How much sheer fun will you get from it? Will you keep coming back? Important questions, all answered by a quick look at the Addiction rating.

OVERALL
A percentage mark that takes into account all the ratings, plus lasting interest, documentation and packaging.

THE TEAM
There are two main *Amiga Format* reviewers: Andy Smith is an ex Spectrum owner who's been playing computer games for many years now and writing about them for almost as long, cutting his teeth on *ACE* before moving onto *Amiga Format*. Andy likes any type of game, from shoot-em-up to strategy game, from adventure to arcade conversion. Maff Evans joined *AF* after doing sterling service for *Zzap! 64*, and he splits his time between playing games and writing reviews for us and our sister magazine *ST Format*. He's another solid all-rounder who's not averse to giving Andy the odd high score contest on the month's best games.



In this game you have chosen to play the part of the Americans and that German King Tiger is proving to be a real pain.



While his attention's drawn, you have a chance to take your Pershing round the back and hit his weaker rear armour.



A side shot from another Pershing has knocked this one out before he could get a shot off at the fast moving Chaffee.

CONQUEROR

AMIGA FORMAT GOLD

RAINBOW ARTS £24.99 ■ Joystick, Mouse and Keyboard

Those of you who like to keep abreast of developments in the computing world in general – and not just what's happening on the Amiga – might just remember a couple of Archimedes games that appeared a while ago: *Zarch* and *Conqueror*. *Zarch* has been available on the Amiga for some while under the pseudonym *Virus* and now here's Amiga *Conqueror*.

It's a tank wargame simulation for one player that comprises three games. Just like in *Virus*, the player has a limited view of the total game area when actually controlling a tank, but can see the whole game map simply by hitting a key. In fact the game uses the very same landscaping routines that were first developed by David '*Elite*' Braben for *Virus*.

Before starting a game you have to decide whether you wish to control American, German or Russian World War II tanks and who you'd like to fight against – it'll always be Germans vs either Russians or Americans, but never Russians vs Americans since they were allies during the war.

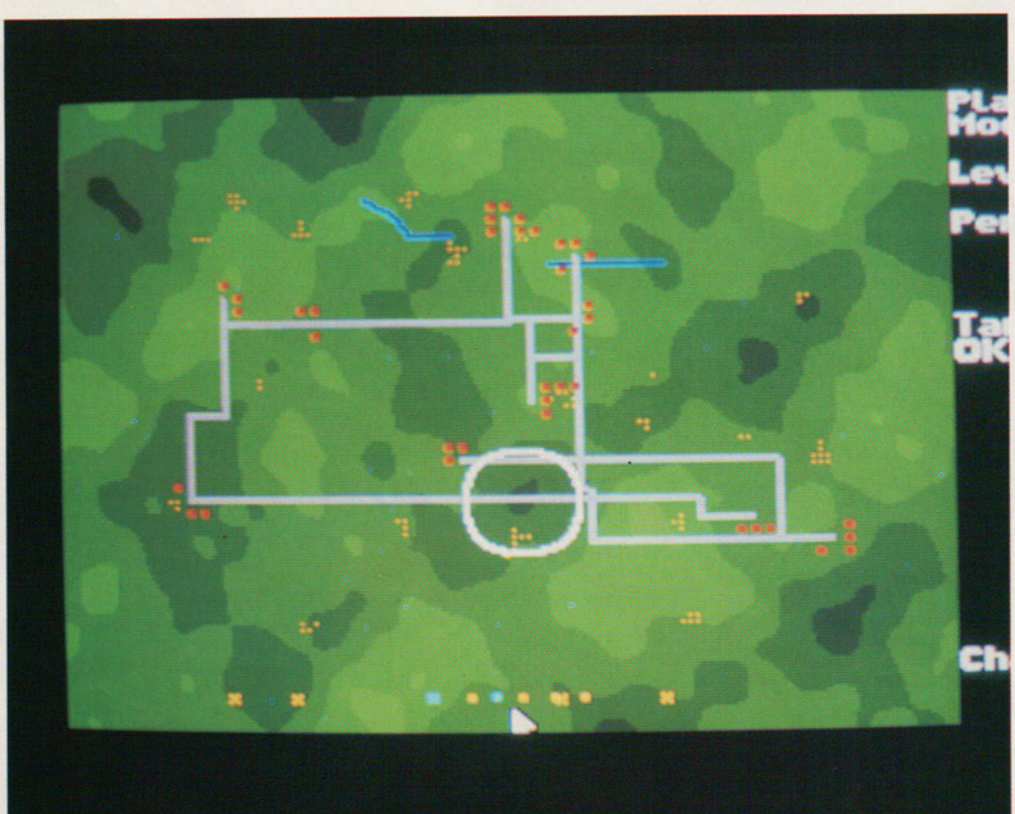
You also have to decide which control method you'd like to use, and here's where you can get a friend in on the action. To play you'll have to both drive the tank *and* fire at enemies, so you can do both yourself or choose to let the computer (or a friend) take over one task while you concentrate on the other. For example, you can drive the tank from the keyboard and use the mouse to control the turret, or you can use two joysticks, either to just drive and leave the firing to the computer, or use them both to drive and fire.

GRAPHICS	9
SOUND	6
INTELLECT	6
ADDICTION	9
OVERALL	93%

Either way, controlling the thing is going to be pretty tough at first.

The three games are arcade, attrition and strategy. In the arcade game you have three lives, start with the lightest tank and have to fend off wave after wave of enemy light tanks, scoring points for every tank killed. After a few kills you move on to a medium tank, as does the enemy, and if you're still alive after a few more kills you move into a heavy tank and just keep going for as long as possible, always outnumbered by enemy heavy tanks.

The attrition game is a mix of strategy and arcade where you start with a selection of tanks (one light, two medium and one heavy) and the computer starts with an inferior selection. The idea is to fend off the enemy waves for as long as possible – once you lose a tank, it's gone for good. Obviously you only control one tank at a time directly, but you can give your other tanks orders simply by selecting them on the map screen and putting a destination cross somewhere on the map. The remote-controlled tank will then head for the cross and will either stay there or pick a new destination depending on whether you select auto or manual strategy from the map page. The last tank you position on the map screen



The strategy game. First thing to do is place your tanks on the base line. Luckily the circle is nearer your side so you should be able to get to it first – then you only have to hold it!.

will be the one you're controlling on the action screen.

In the strategy game you buy whichever tanks you can afford from your points (up to a maximum of 16). At first you only have a few points so you can only afford a couple of light tanks (generally, the heavier the tank the more firepower it has and consequently the more it costs). Then you place your tanks at the bottom of the playing area while the computer places his at the top: the idea of the game is to control a randomly-designated area of the map, so you must allow no enemy tanks to enter the area, for a period of one minute. Every time an enemy tank enters the area the clock stops and will only restart once the enemy tank has been destroyed or left the area.



With a squad of 16 Pershings, the next scenario seems likely to be a real firefight!

Winning involves either holding the ground for a minute or wiping out all the opposition for that mission. Bonus points are awarded for knocking out the enemy and for completing the mission and these points can then be spent at the start of the next mission on more, better and bigger tanks. ■

GRAPHICS AND SOUND

Everything is well animated and smooth too. The tanks are a bit blocky, but at least they look like tanks. The landscaping, although not original, works extremely well and you really get the feeling you're trundling over a real landscape. Nice touches include the track marks that gradually fade and the smoking hulls of knocked-out tanks. The sound is not so impressive being limited to some high pitched explosions and chugging engines. Looks excellent and sounds all right.

LASTING INTEREST

Getting to grips with the control is the first priority and once you've done that it'll take you a while to learn just how to survive in a tank with inferior fire power to your enemies. After that you'll be playing it for hours at a time and as often as you can.

JUDGEMENT

A corking game that's very playable and surprisingly addictive. It's also very tactical at times and will appeal to everyone who likes a good blast but also likes to think they can master a situation by good tactical planning as well. A first-class game that's going to have you begging for a follow-up.



Above: At the start of another game three Pershings move off together in search of some action with the enemy.

Below: One of the Pershings lurks in a small village, waiting for any combat vehicles of the opposite persuasion to appear.



Andy Smith

SHOOTING GALLERY



THE GERMAN PANZER III

The Panzerkampfwagen III (PzKpfw III) first entered production in 1936. Initially it was armed with an L/37 45mm gun, but like most of the tanks at the time it was upgraded throughout its life and ended up with a L/75 24mm in 1942. The version used in the game is based on the Ausf L which was equipped with an L/50 60mm anti-tank gun (like the one pictured here). At the start of the war the tank was equal to its adversaries, but it was soon left behind and even upgraded versions were unable to take on the Russian T34s and KVs.



THE AMERICAN M24 CHAFFEE

The Chaffee saw extensive action during the last few months of the war and it was well liked by the men that recieved them as an upgrade to the M5A1. It was roomier and had distinctly better firepower (75mm gun). It was still too lightly armoured to withstand anti-tank or tank gun fire but twin Cadillac engines gave it a maximum cross-country speed of around 40 KPH which enabled it to out-manouevre almost all German tanks, and it was especially effective in support of infantry against enemy troops lacking anti-tank weapons.



THE RUSSIAN IS II

(IS = Iosef Stalin. The common transliteration 'JS' is, strictly speaking, incorrect). The first IS IIs were issued early in 1944. With a massive 122mm gun, this was the first Soviet tank to be able to take on Tigers and Panthers at long ranges and knock them out with ease. This gun offered 2.7 times more kinetic energy on impact than the 85mm originally pencilled in. Unfortunately, the two-piece round with a separate brass cartridge slowed the firing rate to about two or three a minute and only 28 rounds could be carried.



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The start of a new game. Mahoon has been fortunate so far, grabbing most of Europe with little interest shown by the other players (in this game the players are choosing their own countries rather than letting the computer dish them out randomly).

RISK

Andy Smith

LEISURE GENIUS £19.99

■ Mouse or Keyboard

There's a streak of megalomaniac in each of us, so what could be better than playing a game that gives you a shot at world domination? Up to six players, computer or human, can compete for control of the 50-odd countries that make up the world in this translation of the hugely popular board game.

The game starts after all the countries have been divided up between the players (or the computer has dished the countries out at random depending on whether you're playing using US or UK rules) and your initial batch of armies has been placed on those countries you own.

The game is played in turns and whoever starts is awarded extra armies, the number depending on how many countries the player owns. If later on in the game a player manages to gain control of all the countries making up a continent, then extra armies are awarded, in proportion to the size of the continent, on top of the normal number allocated.

What happens next is what the whole game is about. The attacker tries to conquer a neighbouring territory by rolling up to three dice. The defending country can also roll dice and whichever side scores highest wins.

For example, an attacker throws three dice and scores a six, four and two and the defender rolls a five and a three. Both the six and four of the attacker beat the defender, so in this instance the defender would lose two armies from his country. If that now means he has no more armies in that country then the attacker can invade and take control of it. Defenders always win draws, so if a defender ever throws a six he knows the attacker will be losing at least one army.

Attacks continue in this way until the attacker feels he has had enough and retires. If he has captured at least one country he then receives a *Risk* card. There are three types of card: artillery, cavalry and infantry. Three cards of the same 'suit' count as a set as do one of each type. Sets are handed in at the start of a player's attack phase for extra armies.

Playing successfully is a careful balance between conquering countries and not leaving any gaps that would allow the following player to walk right across you: there's nothing more annoying that capturing seven countries on one turn to find you haven't enough armies left to defend them and the next player goes and takes them all off you. The person who conquers the world is the winner! ■



After one round Mahoon is still in a strong position in Europe, but the brown player has grabbed Africa, denied Mahoon the whole of Europe and denied the grey player the whole of South America.

GRAPHICS AND SOUND

Simple beeps are hardly anything to get excited about, but that's all you'll need to play the game. The graphics are basic but at least the scrolling is smooth. It doesn't look or sound great, but then it doesn't have to.

LASTING INTEREST

As well as the basic game there are a whole load of options which allow you to change the game's parameters. Mission games can be played, where the computer gives you a mission card at the start of the game – for instance, 'Knock out player three' – and you can then concentrate on trying to fulfil your objective. There are a load of other options including a cheat option and a fast option, all increasing the lasting interest of a game that's already packed with it. You'll be coming back to this for years.



After several rounds. Having kicked brown out of Europe, Mahoon built up his forces while brown exhausted his armies in a pointless battle over South America with the grey player. That let Mahoon into Africa and it looks as if things are going his way – but things could change.

JUDGEMENT

If you've ever played the board game you'll know just how compulsive it can become, and the computer version has everything the board game has (and more). Play with a few friends and you'll be in for some long sessions of enjoyable play. It may not be the most complex strategy game in the world, but it's certainly one of the most enjoyable.

GRAPHICS	6
SOUND	2
INTELLECT	8
ADDICTION	8
OVERALL	85%

GRAPHICS AND SOUND

There's not too much animation because this not really an action game. The rest of the graphics – maps, portraits and so on – are all very good. The atmospheric background music compliments the stunning visuals. Excellent stuff, especially when you take into account the strategic nature of the game.

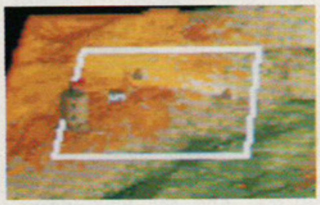


You're playing Ametrin, the Green Beast, in this game, and here's a picture of your castle in the northwest corner of Anrea.

DRAGONS BREATH

PALACE £29.99 ■ Mouse and Joystick

Andy Smith



A close-up of the area which we are planning to inspect in detail. Click on the magnifying glass icon to zoom in on Kilop.



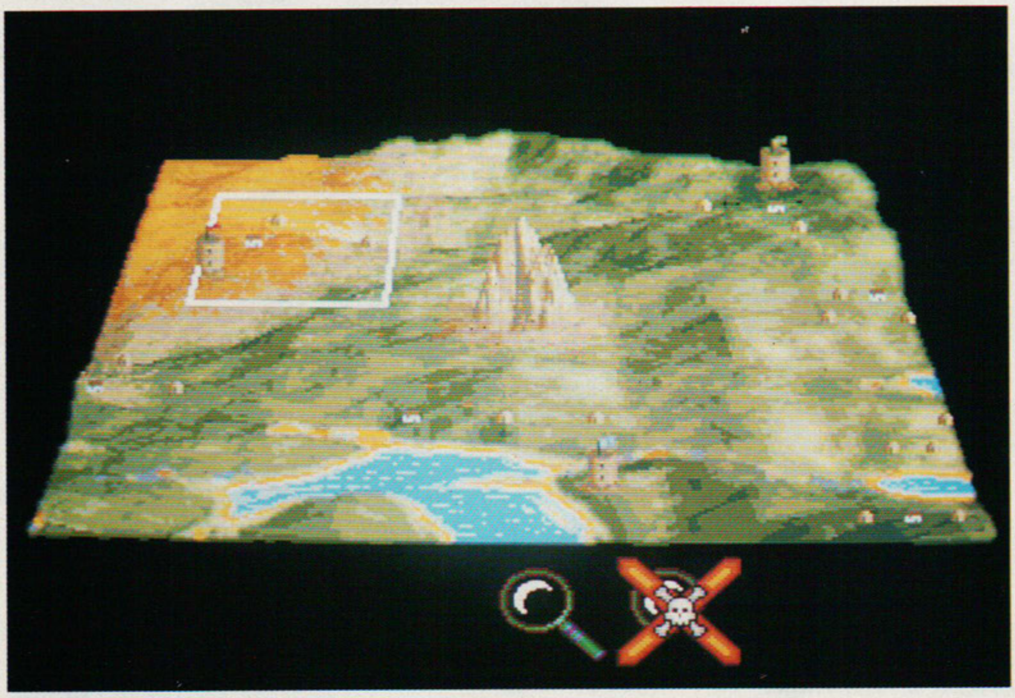
And here we are in 'zoom-in' mode. A whole heap of different details about the towns and villages can be called up here.



Putting one of your eggs on the boil. Just sit back and wait several months and with reasonable care a dragon will hatch.



In the spell room, which is where ingredients are mixed, cut or ground together to produce potentially potent potions.



The land of Anrea with Dwarf Mountain dominating the centre. That white square in the top left corner allows you to zoom in on a small section of land.

In the land of Anrea stands a lofty peak known as Dwarf Mountain. Within the mountain hides a great castle and within the castle lies the secret of immortality. Three people wish to know the secret and so the governors of Anrea, the Great Lords, have granted the honour of entering the castle to the first person to find three parts of a smashed talisman scattered around Anrea.

That's your objective in this one to three player fantasy strategy game: find the parts of the talisman before your opponents do. It's not going to be too easy, though, because in order to find the pieces you're going to have to enlist the aid of dragons.

Each player starts the game with one dragon and a batch of twenty eggs and a few gelds (money in Anrea). Keeping a dragon and incubating the eggs costs money and your only way of making money is to become a tyrant, using your dragon to conquer the villages and towns of Anrea. Then you can impose a tax on the local population to fund your exploits.

The game is played in monthly cycles, each player using the icons at the base of the screen to decide the month's actions, such as sending out a dragon or putting an egg on to hatch. Once everything's organised, the dragons go about their business and then a new turn starts.

That's the basic idea of the game, but things can get a lot more complicated. For example, the simple process of incubating an egg is really quite difficult. Every egg takes several months to hatch, but the process can be speeded up by increasing the temperature on the incubator. This, however, increases the cost and will also make the dragon that emerges weaker than one that's taken longer to hatch. Then there's attacking the towns. The physical distance between the town and your castle affects your dragon's strength and his effectiveness at wiping out a third of the population, a target of attrition which has to be achieved if you are to become controller of the town. Plus there are variable factors that come into play, like wandering barbarians, the town's defences and the amount of zeal you order your dragon to attack the town with.

By far the biggest complication, though, is the introduction of magic. Every player has the ability to cast spells at dragons, villages and towns and eggs, among other things, and the whole spell-casting process is a sub-game in itself.

There are a couple of dozen magic ingredients divided into two major categories: directors and affecters. Directors direct power at the target whilst affecters affect an attribute of the target (population, strength, disease and so on). To cast a spell, a director needs to be mixed with an affecter to get either a positive or negative result depending on the ingredients used and the method of mixing, so there are several tables to consult to see how best to use and mix the ingredients to get the best possible result from your spell. The game is lost when you have no money or dragons and a game is won by the first person to find the three scattered parts of the broken talisman, and have a dragon guarding each piece. ■

LASTING INTEREST

Heaps of it. Just playing a game will take a very long time – thank heavens for game save options – and if you can find a couple of friends to join in the fun you're likely to be playing this an awful lot. The gameplay is such that you can come back to this time and time again and it won't lose any appeal.



Your library contains three books (which allow you to keep an eye on current affairs in Anrea), as well as your list of spell ingredients and a report on your character's status.



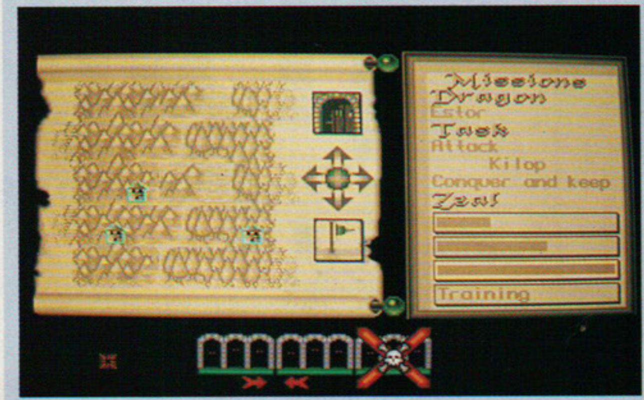
Here's one of your dragons. Check on his state of health simply by moving the mouse pointer over parts of his body.

JUDGEMENT

***Dragons Breath* is in serious danger of becoming a cult computer game. People who are fans of the D&D series of games or fantasy role-playing games in general are going to find this almost impossible to resist. It's very strategic, takes dedication to play well and will not appeal to those who just want to relax for half an hour or so. But if you have a couple of like-minded mates who you can invite round for an evening every week, then you'd better prepare yourself for some engrossing, entertaining and thoroughly enjoyable playing sessions. If you have to play solo, you'll still find it excellent stuff: the computer players are no pushover by any stretch of the imagination.**

GRAPHICS	8
SOUND	7
INTELLECT	7
ADDICTION	8
OVERALL	94%

BURNING DOWN THE HOUSES



Once you've decided which village to attack, set the dragon's zeal level and wait for the end of the turn...



...and you can watch your dragon at work.



You also get progress reports on the other players' dragons.

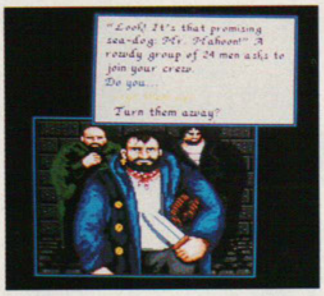


Luckily for you, your first attack was against a village at war with a neighbouring village, and they're so pleased with your dragon's efforts they've had a whip round for you.

PIRATES!

MICROPROSE £24.95

■ Mouse



The start of your buccaneering career and already you've impressed a bunch of cut-throats with your swashbuckling!

Over two years after the C64 version first appeared comes the Amiga version of this swashbuckling adventure, that puts the player in the boots of a 17th Century buccaneer.

Out in the Caribbean, the general idea is to take command of a ship and sail around seeking fame and fortune. You start off at an English-owned port (usually the town of Port Royale in Jamaica) with a small sloop and a handful of men. Sailing around will soon have you coming face to face with an enemy ship (at the start of the game the English are at war with the Spanish and Dutch) and, as you've been charged to seek and destroy enemy ships and towns, it's time to engage in combat.

Combat involves moving your small ship around the screen and trying to get a shot off at the enemy while avoiding any of his salvos. Almost invariably, though, the two ships collide and combat is ultimately resolved by taking on the enemy captain in a duel, which is never too hard to win. Then you're left with the option of either plundering and sinking her or sending a prize crew over and making her a part of your mini fleet – handy because you can always sell unwanted ships at a port. Either way you'll be making money, which always impresses the governors of English ports.



After a battle with a pirate vessel, you have to sword-fight with the captain of the enemy ship to resolve the outcome.



Have at you! Your superior swordsmanship has put an end to this pirate's cowardly ways...



...leaving you with some more booty to add to your collection.

While you spend your life sailing around plundering enemy ships and towns – or your own if you fancy becoming a real pirate – you can often be sent off on little sub-quests like delivering messages or searching for your long-lost sister. You can also sail around collecting pieces of a map to guide you in a treasure-hunting expedition. Once you've had enough of the sea-faring life you can always retire and take up another life depending on how successful you were and whether you found a wife. ■

GRAPHICS	7
SOUND	5
INTELLECT	4
ADDICTION	7
OVERALL	74%

Andy Smith

GRAPHICS AND SOUND

The little tunes that play occasionally are nothing special, but fortunately the graphics are much better, even though most of them are just still portraits or pictures of towns and the like. During the action scenes – sea battles, or attacks on towns – the graphics are very simple and blocky, but at least you can see exactly what's going on and whether you've hit or missed your target.



Off the Spanish Main and it's time to give those Spaniards a taste of your cutlass.

LASTING INTEREST

The game save option means you can keep one character going for a long time, which means you'll be coming back to this whenever you feel in the right frame of mind. Which is surprisingly often, because the game has a strange sort of addictiveness about it.

JUDGEMENT

Microprose have a nerve to bill this as a simulation but it's still lots of fun to play. After a while it becomes a bit repetitive but it certainly appeals to the greedy nature in most of us as it's hard to resist going out and plundering a bit more to make some extra money. If the gameplay had been deeper and more complex it could have been better.

DR PLUMMET'S HOUSE OF FLUX

MICROILLUSIONS £19.95 Keyboard or Joystick

There aren't too many *Thrust* clones on the Amiga, so American publishers Microillusions reckon it's about time there were more.

This one gives the player 28 levels spread over four increasingly difficult missions, where the idea is to fly around the often bizarre and psychedelic levels and rescue a set number of highly animated astronauts by flying into them. Collect all of them and you move on to the next level. The levels vary in size and complexity, including extremely thin tunnels, gaps and gravity which have to be negotiated on some of the later levels.



On Mission Two. That object on the left's actually an astronaut who would appreciate a rescue.

Just to complicate things more, there are enemy bases on later levels that fire at the ship whenever it gets too close.

Simple ideas are often the best and if you're a fan of precise control and gameplay, with just the right level of frustration, you're going to be wowed by this. It's tremendous fun but all that concentrating can give you a headache after a while. Everyone should have at least one game of this type in their collection. ■

GRAPHICS	6
SOUND	4
INTELLECT	6
ADDICTION	8
OVERALL	77%

Andy Smith

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RELEASE DATE
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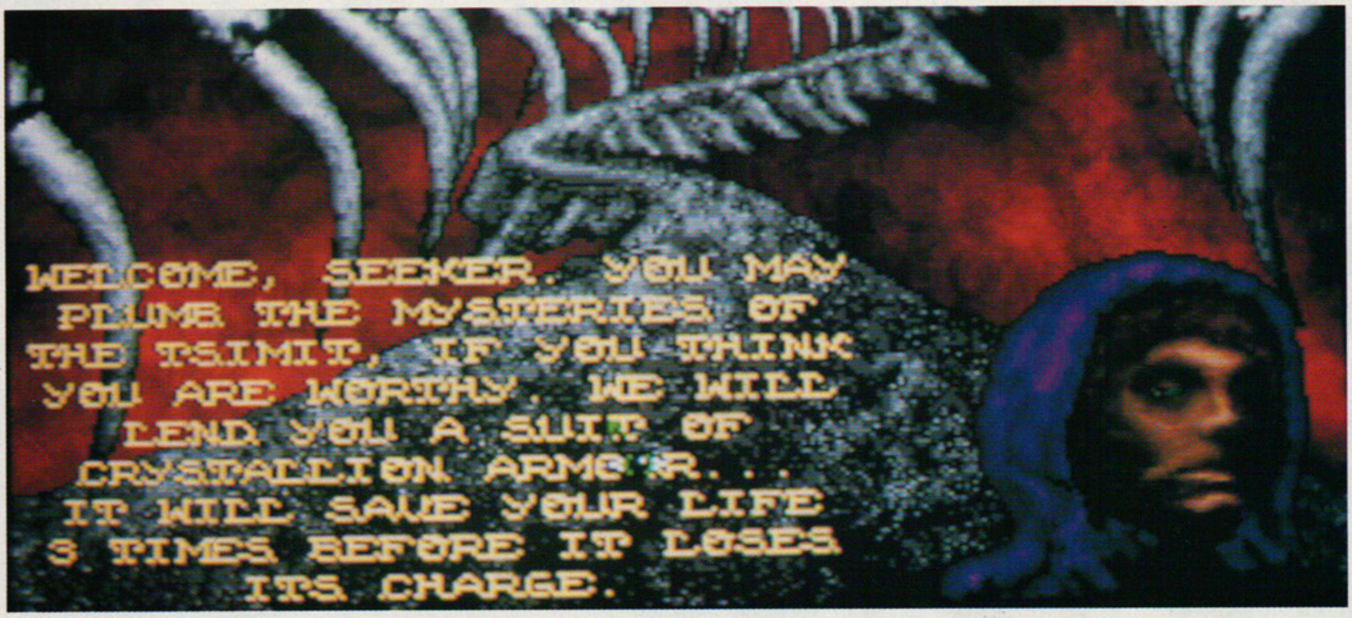
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Make sure to introduce yourself to the Keeper of the Tsimit before venturing into the Veils of his domain. This time he allows you to pass into the caverns, but entry depends on your contributions to the Keepers' funds.

KNIGHTS OF THE CRYSTALLION

US GOLD £29.99 ■ Mouse

GRAPHICS AND SOUND

It is obvious right from the film-style intro that a great deal of effort has gone into making *Knights of the Crystallion* a truly impressive-looking game. The use of HAM mode gives the ability to use more colours to create a subtle and suitably 'mystic' atmosphere. The shadowy caverns of the Tsimit and the flickering candlelight of the Deketa game are a most impressive demonstation of what can be done to create a good feel with HAM graphics (rather than some more gaudy efforts such as Mandarin's *Pioneer Plague*). The sonics department uses a blend of ethnic and synthesizer sounds to heighten the mystic feel of the game and make a nice change to the Hip-House variations usually on offer.



This is the main selection screen. Effectively, you must return to the city of bones each time to choose your next task.

Long ago, when the huge reptiles roamed the Earth, a giant sea creature swam the oceans. This creature was the Orodrid, a beast so large that it had to eat constantly to stay alive: and it was this outrageous appetite that caused its demise.

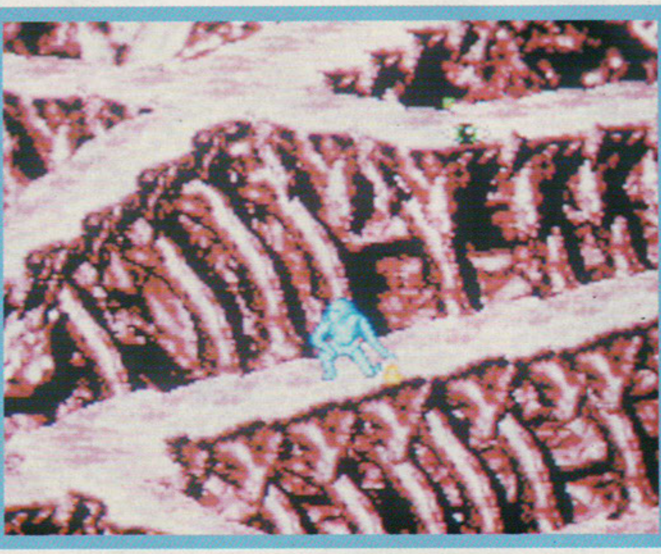
Once upon a time, the huge animal became wedged in a narrow canyon while chasing a whale and because of its size it couldn't turn around to escape. Time and the elements wore down the remains of the Orodrid so that all was left was its massive skeleton, lying lost and forgotten on the bed of the river Odruilen.

Ages passed, and a wandering tribe discovered the skeleton. They discovered that no matter how far they walked, they couldn't leave the shadow of the beast (where have I heard that before?) so they decided to carve into the bones themselves to create shelters. Throughout the generations the tribe grew into a giant community – the Orodrim.

In *Knights of the Crystallion* you take control of the Adreni family, part of an Orodrim Haresh (a type of clan). It is up to you to control the budget of the Adreni family, keeping the other members of the Haresh happy and making sure that you don't go under. The city of Orodrid doesn't live in the way of normal beings, however: there is much more to Haresh life than balancing the books.

Within the skull of the Orodrid skeleton, crystallised brain cells were found. The power from these cells flows though the whole city, giving its inhabitants telepathic powers. A few of the most gifted telepaths may even go as far as to ride their own Crystallion.

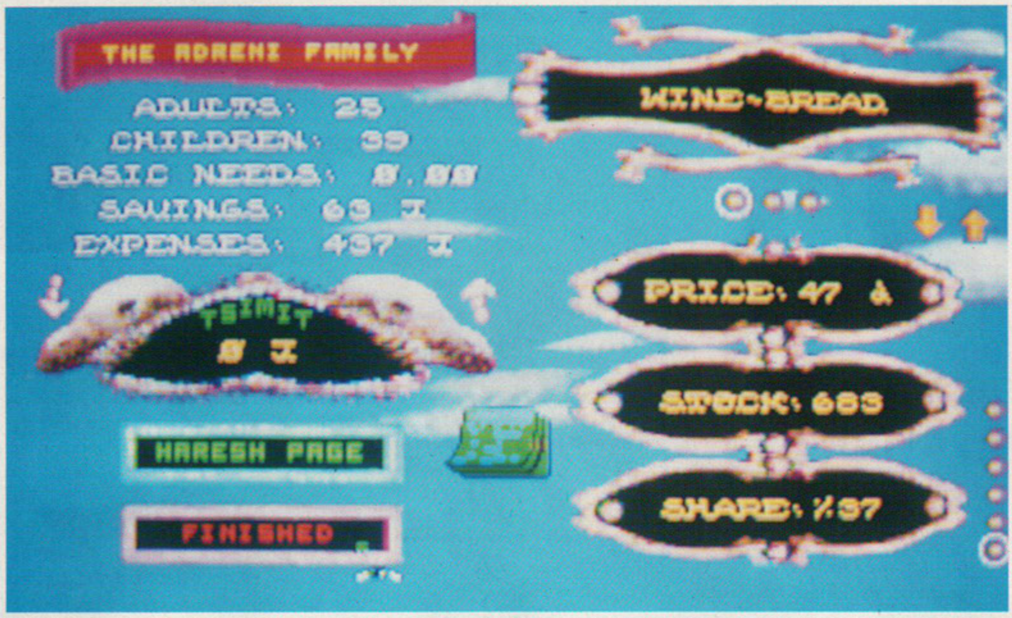
You may just have the necessary power for this honour, but to prove it you will first have to undergo a series of tests during which you must prove yourself...



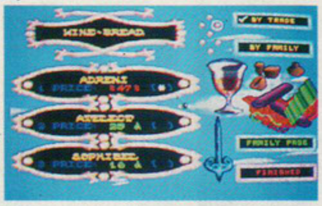
1 THE TSIMIT

This is where the Crystallions are born, deep within the fourth Veil of the Tsimit. You must negotiate the caves, collecting crystals and warding off the evil creatures that lurk in the dark. Sometimes, depending on your mental skills, your unborn Crystallion will help you.

Green, lizard-like Crodas wander around the Tsimit attenpting to strangle you.



This is the Haresh page, where you become involved in the business life of the community. Raise and lower prices to keep money coming in, and pay taxes to the Tsimit to ensure their continuing help.



Below: The Haresh page where you compare your progress with that of other families and judge the state of the markets.

LASTING INTEREST

As is the way with many adventure/role playing games, you may find yourself initially baffled by the sheer volume of things you have to learn to begin playing the game, but if you manage to overcome the initial confusion you will soon be drawn deep into a magical world with a lot more character and depth than many role-playing games.

The complexities that seem rather off-putting at first soon become a way of life, with subtle shifts in the pattern of play making you bend your brain around the problems instead of just following clues. It will take quite a few failed attempts before anything of note is accomplished, but soon things begin to fall in place like pieces in a jigsaw. Having said this, there is absolutely no way that you will finish *Knights of the Crystallion* inside a week, even though the hypnotic quality will keep you playing for hours at a time!

2 DEKETA

This is a game of 'pairs' played with magical cards to help you hone your telepathic skills to the utmost effect. The shifting patterns on the cards give clues to those with a strong mind.



The card game Deketa: keep turning over cards until you can match pairs without mistakes, giving you powers within the Tsimit.

3 BOSU

A board game to test those who are successful at battling through the Tsimit labyrinth.



Bosu: a game rather like Nine Men's Morris, but the idea is to capture junctions. At the end of a Veil you answer a question on the Tocanon then play a game of Bosu. Your score affects whether you keep crystals and move to the next veil.

4 THE PRODA

A strange room where the most adept crystal-wielders can charge their crystal suits.



The Proda, where you lay your crystals in a shifting pattern. Power is transmitted to your crystal suit when the 'Prods' are close to your crystals



The pink and blue are crystals, the orange blob is trying to nab your crystals, and the egg-cup-like affairs are the Prods, which move constantly.

JUDGEMENT

Not many games use HAM mode to portray the action, so at first sight it may seem that US Gold are just going for a gimmick. Even if this is the case, *Knights of the Crystallion* has enough depth and gameplay to stand up as decent game in its own right. Sure, the beautiful graphics and haunting sound don't hinder things any, but there is much more enjoyment to be had playing *Crystallion* than simply watching a demonstration of the Amiga's capabilities, a fact that role-players, adventurers and even arcade adventure fans will appreciate once they play for themselves.

GRAPHICS	9
SOUND	8
INTELLECT	8
ADDICTION	7
OVERALL	91%

Maff Evans

ROTOR

ARCANA £19.95 ■
Keyboard or Joystick



A really tough mission this, especially since you've just exposed two mines and there's nowhere to go to escape the blast!

Arcana have been very quiet for the last year trying (and so far, failing) to get *Mars Cops* out. While we wait, here's one to fill the gap.

Set in the future, when most young adults have the choice of either working in slave-like conditions in Antarctic mines or joining the Roto-raiders attack force, this one-player game has its roots in classics like *Thrust* and *Oids*.

As a member of the Roto-raiders (well, a game about mining in the Antarctic wouldn't excite too many people) you have to infiltrate four enemy fortresses, destroy any hostile installations and collect any useful gadgets thoughtlessly left lying around by the enemy.

Your ship, viewed side-on, is armed with a front-firing gun, a tractor beam for picking up cargo and a limited shield to protect you from enemy fire.

Once you've proved proficient, first at handling your ship and then at firing and using the tractor beam, in the two simulators, you're given a three-letter code which allows you access to the first three missions.

Missions involve flying around the enclosed enemy fortress, taking out the enemy and collecting containers. Inside the containers you'll find ammunition and fuel which your bosses want you to beam back to them using your on-board transporter. Other things to collect include energy crystals which can be converted into useful power-ups like extra hull armour and better weapons. As well as power-ups, collecting things (and destroying enemy installations) earns you Prestige Units and enough PUs have to be earned during your missions to allow you to progress to the next level – right up to Level Six (where things are really tough!) ■

GRAPHICS	8
SOUND	5
INTELLECT	6
ADDICTION	8
OVERALL	84%

GRAPHICS AND SOUND
There isn't too much in the sound effects department, but the ones that are there are fine. The graphics are much better, being very colourful and well animated. The graphics aren't the most important thing in a game like this but obvious care and attention has been paid to them which is nice to see.

LASTING INTEREST
Getting to grips with the controls will take you a while, but once you do you'll find the game will keep you playing for months.

JUDGEMENT
The idea may have already been done, but there are enough new features in *Rotor* to keep it exciting. Fans of precise control games will love it, and you'll be surprised how addictive the thing can become thanks to the good difficulty tuning. It's not varied enough to receive a Format Gold award, but then again we're renowned for our hard marking.

THE GRAVITY OF THE SITUATION



The manoeuvre simulator, in which you learn to fly and also to collect objects.



The combat simulator where you then learn how to deal with things firing at you.



On an actual mission, the star shape top right is a sun crystal you must collect to get home.

FIRE

NEW DEAL ■ £29.95
Joystick



Fly along, mind the balloons and peasant huts and destroy the enemy helicopters and installations.

Who said there were only seven stories? Well, it's looking more and more like there are only seven computer games. This five-stage, one-player game harks right back to those early days, the days of *Defender*.

You're in control of a helicopter, viewed side-on, moving across a horizontally-scrolling landscape. The idea is to do good deeds on each of the five levels by destroying baddies who send jets, helicopters, tanks and so on against you. On the first level you're trying to put a halt to drug trafficking in South America, before moving on to rescue some innocents in Beirut.

It's all very similar stuff and it's all been seen before. Everything is well animated and colourful and it's been well put together, but it's very dull.

***Defender* had something in it to get excited about ten years ago, and if a bit more thought had gone into the game design of this version it might have turned out a bit better. Which is not to say it's complete rubbish by any means, but if you're really after a new shoot-em-up there are plenty of better ones to choose from around now. ■**

GRAPHICS	6
SOUND	5
INTELLECT	3
ADDICTION	5
OVERALL	43%

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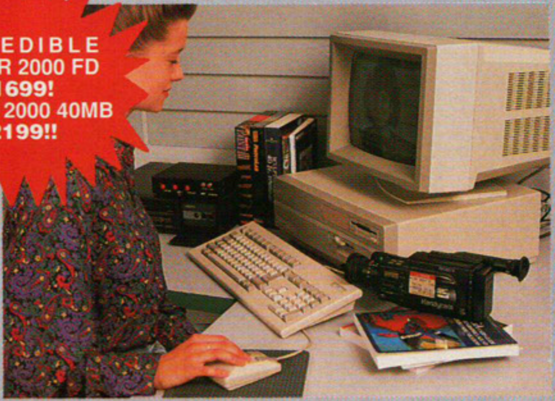
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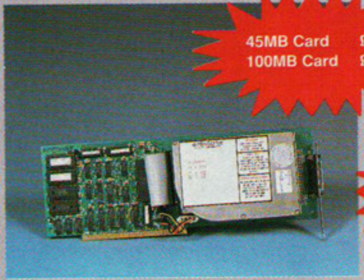
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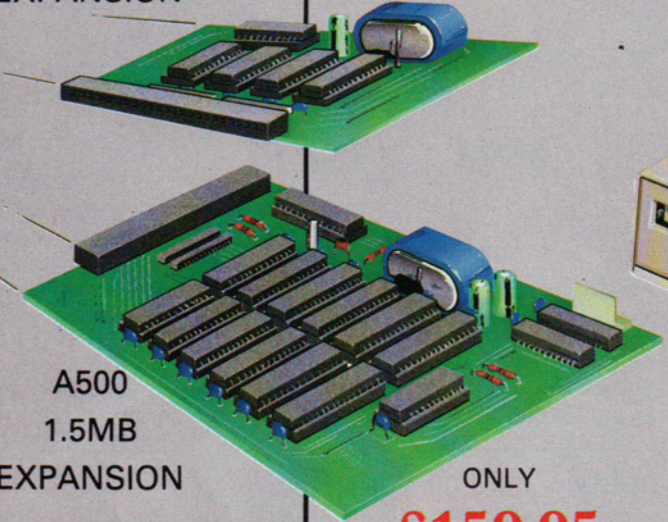
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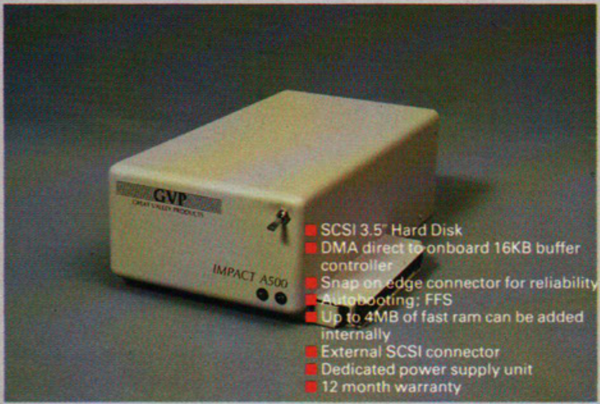


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Superb ray-traced graphics serve to introduce the action.

OVERLANDER

ELITE £19.99 ■ Joystick

Originally released a couple of years ago on just about every format except the Amiga, *Overlander* follows in the footsteps of games such as *Roadblasters*, and *Fire and Forget* – it's a 3D driving game with a generous helping of the old blast-the-enemies-to-bits with your on-board weapons.

The plot places you in the future as a driver in the year 2025. CFCs have destroyed the ozone layer, so that the human race has had to take refuge away from the suns harmful ultraviolet radiation in huge underground cities. Because of the vast distances between the cities, the only way of getting from one to another is via the old freeways. These roads are not the place for normal citizens, due to the radiation above ground and the violent mutant beings living on the surface. Whenever a trip is necessary, the government sanctions the use of the Overlanders – mercenaries with extremely powerful vehicles at their disposal. The reason for the trip doesn't bother them – they only want the money so they can improve their cars.

You are one of these drivers taking on a government funded mission. Half the money is given up-front to give you some cash to add some kit to your car. Add-ons range from $100 flame bombs to a $10,000 lean burn engine, but a stock of fuel is needed before you can go anywhere and that costs money too! Don't worry too much though, since dosh can be topped up by blasting the overground mutants with your on board cannons or any other weapons you may have bought.

If you manage to reach the end of the level, the other half of your fee is paid and you are given another choice of missions. ■

GRAPHICS AND SOUND

Whereas the sound is the usual run-of-the-mill boppy bassline and drum machine effects, the graphics are much more impressive. The depth-cued shading gives the game a realistic quality and the nicely drawn open desert wastelands have a suitably desolate feel, in fact the appearance in general is very atmospheric. Even the selection screens have been beautifully designed, with small but perfectly formed symbols to represent the options. One more thing – why don't more



Blast everything out of your way with the subtle ploy of firing a few firebombs.



Destroy the truck, but watch out for the explosive canisters it drops in your way.



Look out! That cyclist is far from being as innocent as he might first appear!

DRIVIN' FORCE

DIGITAL MAGIC £24.95 ■ Joystick or Mouse

Hurtling around race circuits in a high-powered racing car is all very well, but haven't you ever fancied trying your hand at one of those huge American trucks? You now have the chance.

There are trucks, Formula One racing cars, ordinary sports cars, buggies and motorbikes to race around in this one-player game. Which vehicle you race in depends on which of the four competitions you enter. For example, in the league game you race in all the five vehicles, one after the other, over increasingly difficult courses (each vehicle has five different courses). If you start in the trucks, you race then move onto buggies on another course – get the idea?

The knockout competition is similar in that you race in all the vehicles, but the tracks are in a random order: so you could race in the buggies over a difficult course, then cars over an easier one: to continue racing in the knockout competition you have to finish each race in the top three. Then there are mini versions of knockout and league: you choose the vehicle you want to drive or ride, but in the knockout you race that vehicle's courses in order of difficulty whereas in the league you race in a random order.

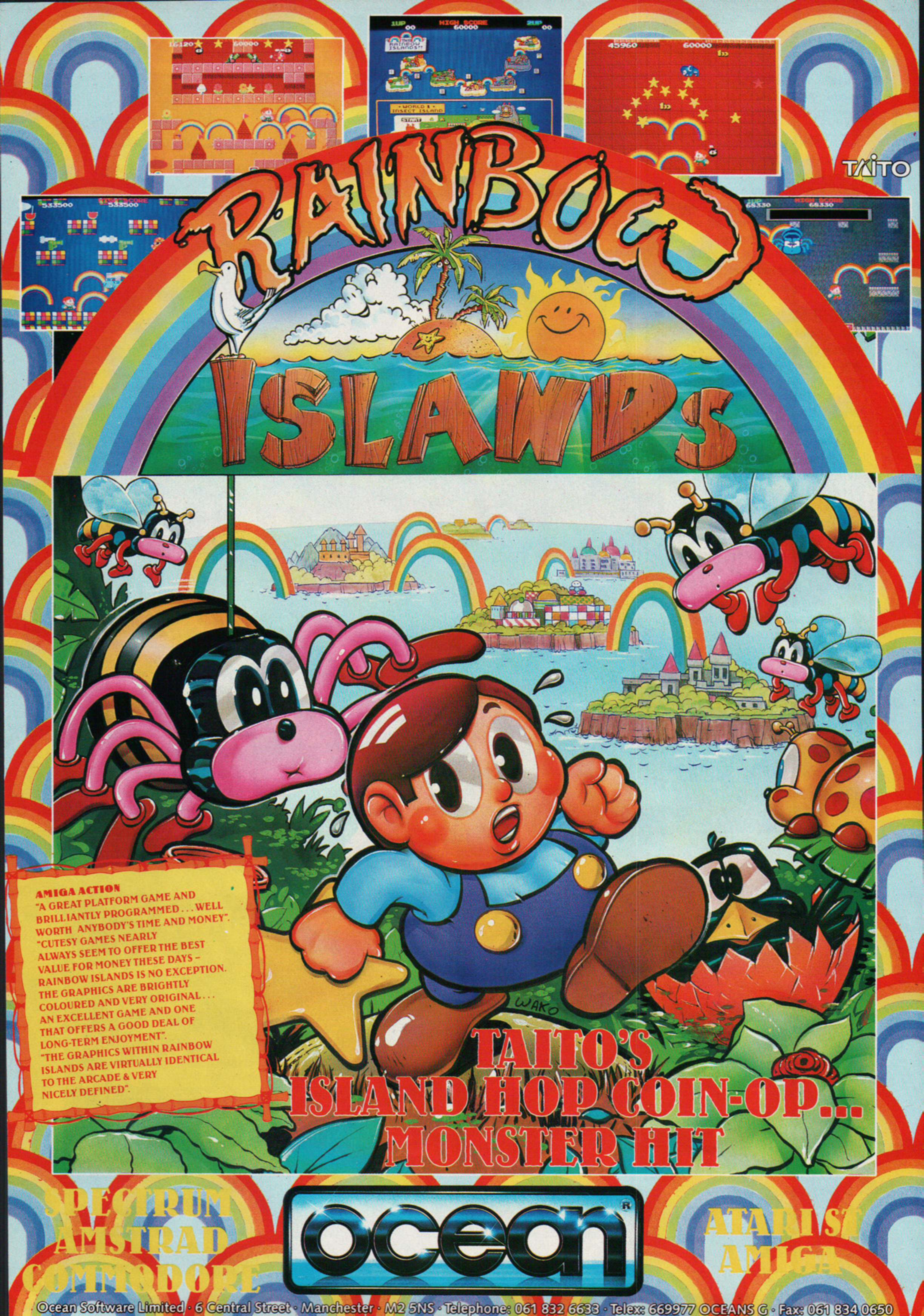
Like most racing games, it's best not to crash into roadside obstacles or the other road users. Actually, you simply bounce off of them, but it does lose you valuable time and more often than not a couple of places too. Far more serious, simply because it takes longer, is when you fall off of a section of the circuit that's suspended above the ground: you fall to the ground and have to wait until you're re-positioned on the track before you set off again. ■

GRAPHICS AND SOUND

Boy, do those graphics shift! This is arguably the fastest race game to have appeared to date. The impression of speed is great, and the way it's been done is by using a roadway system similar to that used in games like *Power Drift:* a roadway made up of log shapes that grow in size as you move towards them. This does tend to give everything a blocky appearance, especially roadside buildings and trees. The sound can be switched between a number of jaunty tunes, which are all right, or sound effects (engine noises) which are also fine.

LASTING INTEREST

With 25 tracks to race round you're bound to get wrist-ache. The different vehicles are different to drive and handle differ-



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people use the Amiga's overscan mode? As *Overlander* definitely benefits from its use.

LASTING INTEREST

The obstacles and enemies on every level fall into a definite pattern, so that you can learn just what lies ahead and remember how to tackle it next time. Not that you'll get through straight away though, it's going to take a good few goes before you start beating the roads!

JUDGEMENT

This type of game was all the rage a couple of years ago, so why has it taken so long for Elite to get an Amiga conversion of it together? Probably because the programmers wanted to do it properly and to be honest they have produced a good looking and playable game. It's not exactly an innovative idea and hardly breaks new ground in technical expertise, but it does provide the driving, shoot-em-up addict with a high quality fix of blasting action. Fans of *Roadblasters* should put aside their disappointment at the official conversion and try this for size, but casual players should check it out carefully before slapping the money on the counter.

GRAPHICS	8
SOUND	6
INTELLECT	2
ADDICTION	7
OVERALL	81%



Cut your teeth on smaller bikes then move to the big 500cc model.

THE CYCLES

ACCOLADE £24.99 ■
Joystick or Keyboard

Following on from *Grand Prix Circuit*, which put the player in a Formula One racing car, comes *The Cycles*, which puts you astride a 125, 250 or 500cc motorcycle.

There are fifteen international tracks to race round (thirteen on a 125) and nine computer-controlled riders to beat. Pick your bike and spend a couple of laps practising before setting out on a real race. In this mode your competitors get out of your way, the gearbox is auto, you can't blow your engine through over-revving and spin-outs are impossible. Step up a couple of difficulty levels, though, and you'll have to start changing gear yourself while ensuring you don't blow your engine.

The number of laps per race can be set by the player (up to 99) but the default setting is three. High-score fans will be pleased to learn that the four top times for each circuit and for each bike class are saved to disk.

In the real race you have one qualifying lap to determine grid position before starting. Then it's a case of avoiding the other riders (crash into one and you'll probably go flying across the track and out of the race) and also trying to stay on the raceway: on the higher difficulty levels your bike's handling can be harmed by riding across the grass. Select the bike type, choose the circuit and go! ■

GRAPHICS AND SOUND

It's all viewed over the handlebars, which works well, and it's faster than *Grand Prix Circuit*, giving a good impression of speed. The animation is not outstanding but it's more important to have that impression of speed. The rear-view mirror is a nice idea and can be useful at times. The sound is nice, though not as throaty as you'd expect.

LASTING INTEREST

Biggest problem with other riders is crashing into them as you overtake: otherwise they're not difficult to beat even at Pro level. A shame, because you're left to beat your own lap times. Still, there are plenty of circuits to race on and most of them take a lot of practice, which means you'll be at it for a fair while.

JUDGEMENT

A classy racing game, fractionally better than its predecessor. If you're a fan of racing sims (cars or bikes) you'll find this well worth some shelf space.



Suzuka, in Japan: the tunnel after a bend can be a problem.



You've overcooked it racing in Austria: end of the race for you.

GRAPHICS	8
SOUND	7
INTELLECT	6
ADDICTION	8
OVERALL	84%

ently, but not vastly so. A good one to boot up whenever you feel like a race.

JUDGEMENT

The game's biggest let-down is the completely unreal feel to your vehicle as you drive around. It swings from one side of the road to the other and through corners most unrealistically: but then it's arguably not a sim. This does take something away from the gameplay, turning what could have been an excellent driving game into one that's just good.

GRAPHICS	8
SOUND	6
INTELLECT	2
ADDICTION	7
OVERALL	81%

CARS 'N' TRUCKS 'N' BIKES



The start of the truck-driving leg of the league. These are the big fellas of the circuits!



On a motorbike this time, about to proceed onto an elevated section of the course.



Formula One suspensions just weren't really built to go over these kinds of bumpy tracks!



Clonk! That rock is solid! Just as well you'll bounce off and lose only time, not your wheels!



One of the intermediate screens: the next race looks likely to be very slippery.



More truck driving, and fortunately you've made it over the tricky raised section.

Right: The start of the game. You dive left to avoid the gunfire, but there's a tank ahead which could make life difficult.



CABAL

OCEAN £24.99 ■ Joystick

Ocean are fast becoming the industry specialists at *Operation Wolf* and *Operation Thunderbolt* type games, as evidenced by the arrival of another one. This time, though, it's a Tad coin-op conversion not a Taito one.

The scenario is simple enough. You're behind enemy lines and have to fight through five levels, each with four stages, to get back to your own lines. It's a simultaneous one or two player game and the general idea is to move your character around the bottom of the screen shooting at all the enemy soldiers that come running on from the sides of the screen.

Armament consists of a submachine gun, the direction of fire indicated by a large sight on the screen. With the fire button pressed you fire the gun and move the sight around. Release the fire button and control reverts to moving around the hard-bitten warrior, who can move from side to side and even roll along the ground – which is handy because all the enemy soldiers are armed and taking a hit from them removes one of the four lives.

There are also things to hide behind at the start of each level but they can be destroyed if they get shot enough times. Buildings can also be removed in this fashion, making it easier to hit the enemies that would normally hide behind them.

As well as soldiers there are also bigger things to shoot at including tanks, helicopters and trucks – all of which can be destroyed with machine gun fire, but you may find it easier to kill them by lobbing one of the limited supply of grenades at them. Extra grenades and extra weapons, including better machine guns, can be collected on each stage by picking up the symbols that come flying from the back of the screen to land at your feet. Unfortunately once a life is lost you also lose any extra weapons collected.

There's a fixed number of enemies to kill before progressing to the next stage and once the fourth stage is completed there's an end of level guardian to defeat before moving onto the next, increasingly difficult, level. ■

GRAPHICS AND SOUND

The main sprites are not very well drawn but the rest of them including the hardware are all right. It's all well animated and the most crucial part, the gun sight, moves smoothly and swiftly. Sound is limited to a rat-a-tat machine gun rattle which is fine but a few explosions would have been nice.

LASTING INTEREST

The hardest things to overcome are the end-of-level guardians which will pose a few problems, even for two players, so it will take a while to complete. With some 20 stages to survive it's got a fair amount of lasting interest for a game of its type.

JUDGEMENT

Although it lacks the class and polish of the *Operation* games it's still fun to play, especially in two player mode, and is addictive. It's also been well converted from the coin-op (which also lacked the class and polish of the *Operation* games) so fans of that will not be disappointed.

GRAPHICS	7
SOUND	5
INTELLECT	1
ADDICTION	7
OVERALL	71%

Andy Smith

Below: Two players: collect that rifle for a mega-hard weapon and go on a killing spree.





There's a porky hard gunship out to get you and you have absolutely nowhere to hide.

Get your hands on the grenades and go make their life hell.





Your trusty but totally muddle-headed mongrel chum, Sam. He might look cute and useless but he has a nose for trouble too.



What lies behind the gates? It might take an age to find out, by which time the world might be decimated by the demon.



How did you do in the prologue? Did you hide the clues before getting fried? Your son will find out before long – so be sure!

DEMON'S TOMB

MELBOURNE HOUSE £19.99 ■ Mouse and Keyboard

This demon – well Brian, he's a demon. A terrier of quite extraterrestrial proportions. So vicious that he makes Vinny Jones look like a pacifist. Your job, in this text adventure, is simply to stop the hideous creature from wreaking violent vengeance on this poor planet of ours.

It would appear that there was once this fellow Barfwyd who had two sons, Thai and Tzen. Both good boys, nice to their father and learned in the craft of high priesthood. Unhappily the two lads argued about whether or not the Universe had an end, as one does. And as usual one of them, Tzen, turned to the bad. Not just smoking behind the bike sheds: the Forbidden God, Darsuggotha, got his claws into him. After a bit of openly worshipping the Forbidden one, Tzen was banished to the 'Unholy Island of Breton'. But he's all set to rise again – a mere vehicle for the evil Darsuggotha. Unless, that is, you can stop him.

The game begins with you playing archaeologist Prof Edward Lynton. You are exploring a burial mound and have realised that dark things are afoot. Why do you begin by playing your father? Easy. Pa gets it in the neck within the first few rounds. Burnt to a cinder. The point about this prologue is firstly to get a feel for the game and secondly to allow the poor professor to save some clues from the flames. There's no way you can save the sorry chap so don't waste time trying to. You only have a precious few rounds in which to secrete the secrets. It must be said that this 'straight-in-at-the-deep-end' approach works a treat. All very turbo-charged, it forces you to think but provides some excitement too.

Once you are happy that you have saved enough clues as well as leaving a few pointers too, you die and the game passes over to your 16-year-old son, Richard. Your dad's never been too together but this year he even managed to miss your birthday. So, bereft of prezzies and just a little worried about the old duffer you go out looking for him. Oh, there's also your trusty though utterly brainless dog, Sam.

What makes it easy to 'feel good about yourself' are the excellent documentation and numerous ways of playing the game available to you. *Demon's Tomb* can be played via a menu system, straight text entry, two column screen, different colours and a whole host of other wonderments. If you get too lazy to bother thinking up verbs for yourself, use the menus. If you're feeling a tad more adventurous you can define one word to mean another and define macros, which are multiple commands. ■

GRAPHICS	7
SOUND	N/A
INTELLECT	9
ADDICTION	6
OVERALL	80%

GRAPHICS AND SOUND

For some strange reason, still beyond me, text adventures suffer in the sound department. *Demon's Tomb* has no sound at all. While it doesn't suffer by this, it might have been improved by the occasional screaming howl and spooky tune.

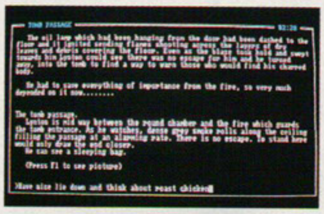
The graphics are adequate. With Graphics mode on, a press of F1 will bring up some well-crafted piccies, which might even hide some clues. F2 acts as a here-comes-the-boss button for those terrible people who play when they should be working. Happily then, the crucial atmosphere is not adversely affected and the pictures really add to the enjoyment of the game.

Below: *Demon's Tomb* can be played straight from the keyboard or with a handy menu system. A combination of the two makes the going a little easier but the game just as hard.



LASTING INTEREST

This one should run and run. You, rather than the game, make the discoveries, solve the puzzles and get irritated by Sam – the lovable mutt. The descriptive passages, which can make or break a game of this type, are evocative, witty and far from being intrusive. *Demon's Tomb* has a good, solid, no-mucking-about feel to it which doesn't detract from the intelligence needed to play it or the excitement it generates. Not only are repellent demons, dead dads, windswept moors and impenetrable mansions in abundance, there are also innumerable strategies to cope with them.



Tim Smith

Above: You can run but you can't hide. The opening sees you chasing against time to leave clues and defeat the demon.

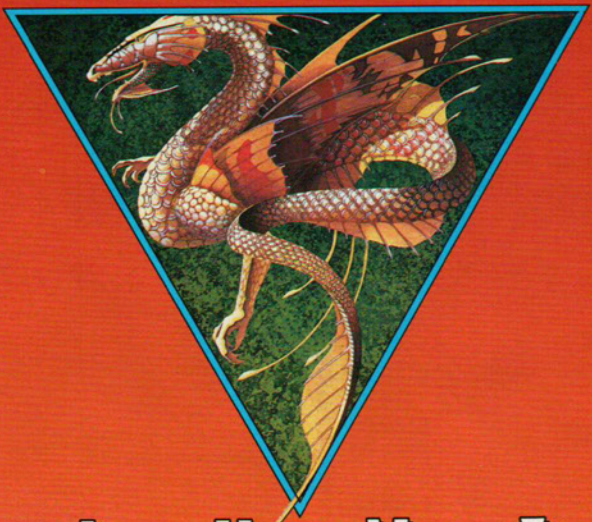
JUDGEMENT

As a down-the-line text adventure, *Demon's Tomb* has a great deal in its favour. The opening rounds, in which you play the dad, are an excellent way to get into the game. Scenes, plot and puzzles are provided with intelligence and not a little flare.

Defeating the foe and avenging your father's death (and your lack of birthday goodies) are not easy tasks to complete with sanity, body and dog intact. The help pages at the back of the manual provide hints and tips in an encoded form, so even when you're attempting to cheat you still have to think. Lord knows what *Demon's Tomb – He's Awakened and Wants his Breakfast* – will be like, but we can only hope it will be as good.

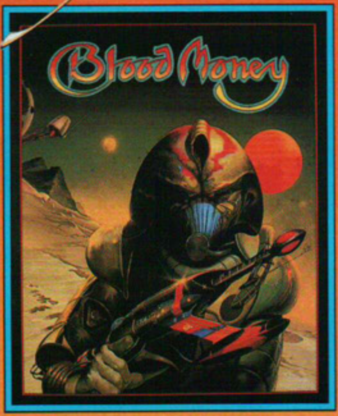
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C + VG Hit!
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New Computer Express
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The BITMAP BROTHERS

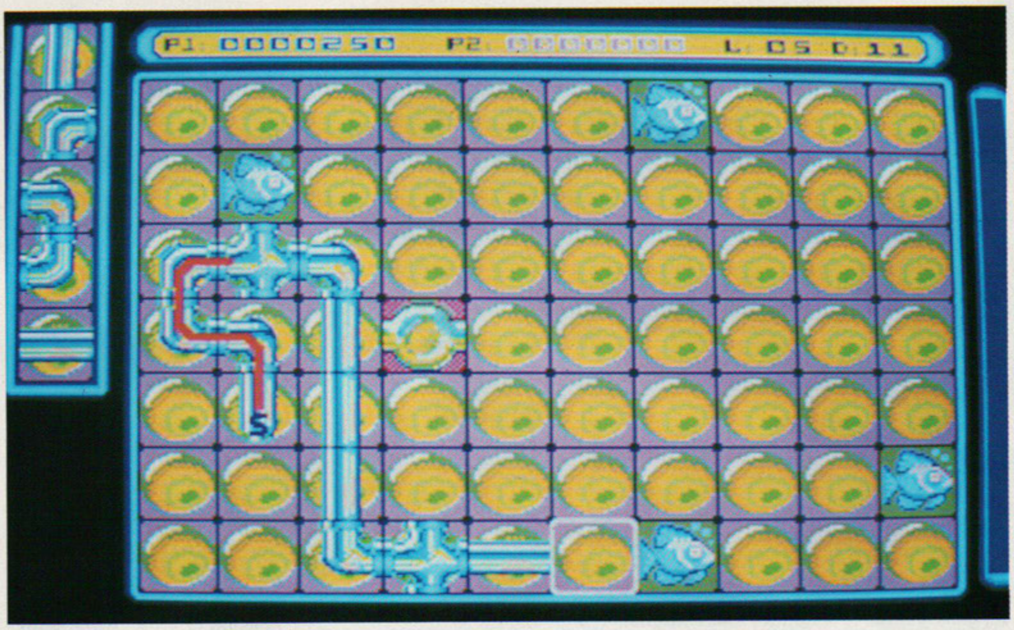
PSYGNOSIS

CINEMAWARE

MIRROR Soft

Distribution by: Mirrorsoft Ltd., Irwin House, 118 Southwark Street, London SE1 0SW

AMIGA/ATARI ST/PC £29.99



Level Five. That fish can't be moved, so you'll have to turn (head for the reservoir to gain more time).

PIPE MANIA

EMPIRE £24.99 ■
Joystick or Keyboard

Simple ideas are often the best, they say, and here's a case in point. Way back at the start of the Eighties one of the early 'classics' was a game (and its clones) based simply on building a pipeline across the screen before the time limit and the slime caught you out. The longer you survived, the more points you got.

Here we are in the Nineties and here we are with a pipe-laying game. This is a one or two player game with loads of improvements over the originals, but with a remarkably similar gameplan.

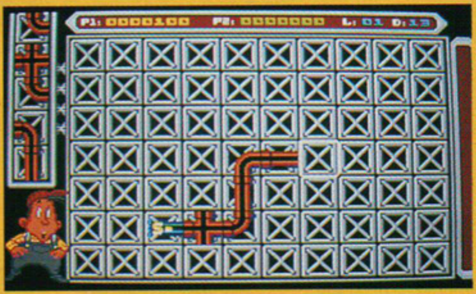
You play on a 10x7 grid of tiles: a timer ticks down on the right of the screen and a tube of tile-sized pipe pieces is on the left. There's a tile somewhere on the grid with a big S on it – that's the start tile. The idea is then to move a hashed line around the grid and press fire when you want the bottom piece of pipe from the tube to be dropped on to the selected tile. Once the timer reaches the bottom, ooze flows from the start tile through the pipe you've laid. Obviously, the more pipe tiles laid, the longer the ooze will flow and the more points you'll get.

But where's the catch? Firstly and most importantly, the pipe sections cannot be chosen: you have to take the bottom one every time. There are ways to get round this – pipe sections can be laid on top of other ones, so you can keep laying pipes until you get the right section. Then again you can can lay pipe sections all over the grid until you get to the right one. There is a drawback to this method though: every section costs points, so you can't go chucking them around everywhere. Once you've played a few times you'll realise that you can start laying unwanted pipes in anticipation of where you're going to be running the pipe.

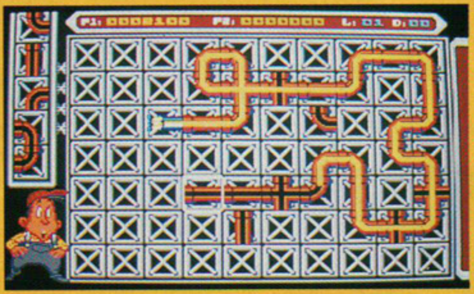
The other major problem is the introduction of hazards on later levels. Things like obstacles which won't allow you to lay pipes on them, or one-way pipe sections and so on.

There's a plus side to the later levels, though, including reservoirs which buy you a little time if you can get the ooze into them and side-of-screen escape routes (holes in the side of the grid that allow you to escape to the other side of the screen). Work through the game and every four levels or so you get a bonus level and a password which means you don't have to work through early levels every time you boot up. ■

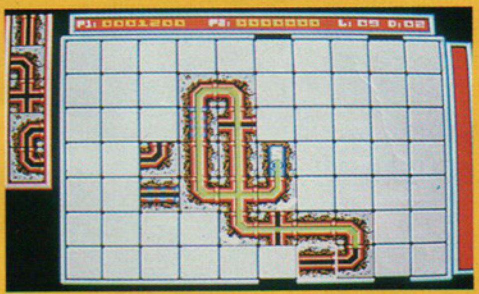
GRAPHICS	7
SOUND	5
INTELLECT	7
ADDICTION	8
OVERALL	81%



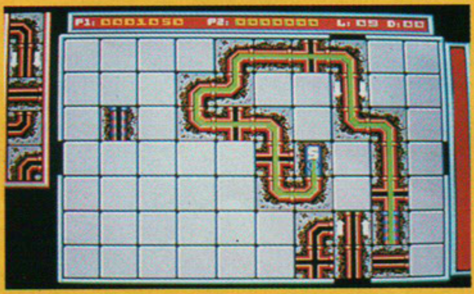
The start of the game: with only five pieces laid it looks as if you'll have to start all over again.



That's better! Loads of pipes laid.



Level Nine, and those awkward one-way pipes make an appearance – help!



You've just got the ooze through a bonus pipe which means big bonus points.

GRAPHICS AND SOUND

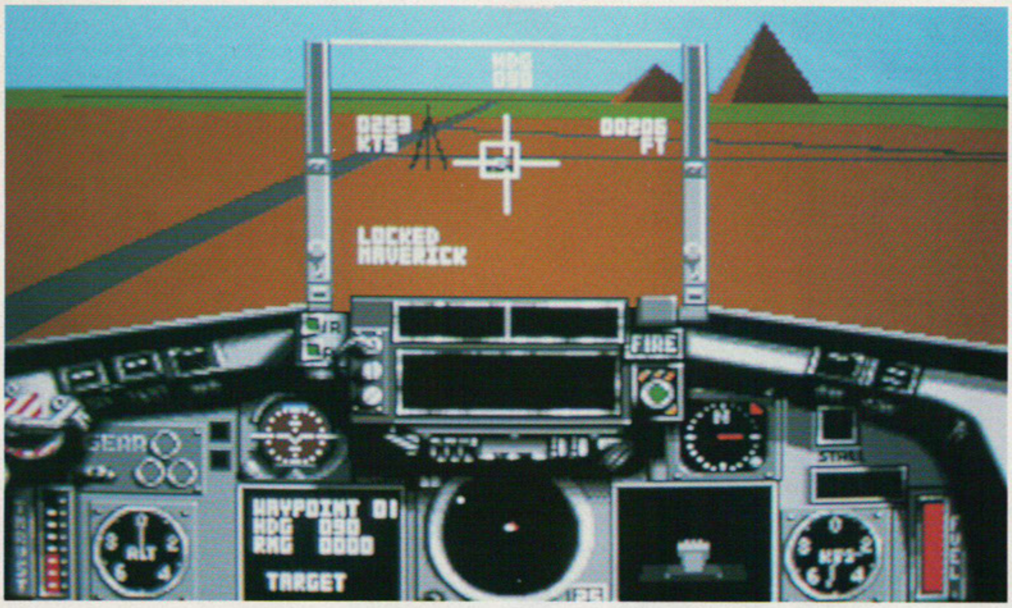
It looks simple, but it's very effective. What graphics it has are good, but you'll be far too busy wondering where to put the next pipe to worry much about them. The tunes are all right but get on your nerves after a while: fortunately it plays just as well with the volume turned down.

LASTING INTEREST

It has a fair amount: you'll spend long sessions with it and come back to it often too.

JUDGEMENT

Unless you like games that stretch your mind and frantic, frustrating gameplay you're not going to enjoy this. On the other hand it's very addictive and playable and has heaps of the 'one more go' factor. Good stuff – not excellent, but good.



Video-guided Maverick missiles are extremely effective against installations.

FIGHTER BOMBER

Andy Smith

ACTIVISION £29.99 ■ Mouse/Keyboard

There are already a good few combat flight simulations around, so what makes Vektor Grafix, the people behind *Fighter Bomber*, think they've got more to offer?

Well, for a start the game is apparently based on the annual Strategic Air Command Bombing Competition that's held in the heart of the American West. Several nations take part in this contest, including the Russians and British, which comprises a series of missions designed to show off the aircraft. The nation which performs best is awarded the Curtis LeMay Bombing Trophy: America have won it most in the last 20 years using F-111s, but the Brits have pinched it twice using Tornados.

The first thing to do, then, is decide who you'd like to fly for, the list comprising the USA, Russia, Germany,Sweden and Britain. The Americans have several planes to choose from including: F-15, F-4, and the F-111. The Brits and Germans are offering the Tornado, the Swedes the Saab AJ37 and the Russians the MiG 27. Then you can select the sort of enemy plane you'll be likely to encounter, including the brand-new MiG 31, the old F-14 and the sim writers' favourite of the moment, the F-16.

As with all flight sims, the next thing to do is get to grips with the controls and learn to fly the thing. Once you've got that out of the way, you can start the game proper and start hitting targets. As your level of competence rises so does the complexity of the missions until you end up trying to hit multiple targets: check them out on the mission briefing map before setting off or you could end up arming your plane with completely the wrong armaments! And once you get far enough into the game you'll have to attempt refuelling in mid air, by locking on with a jet tanker, and then continuing onto other targets (including non-military targets like bridges).

Once you've completed the set missions there is also the facility to design, test and fly your own missions – but remember, all your progress is saved to disk! ■



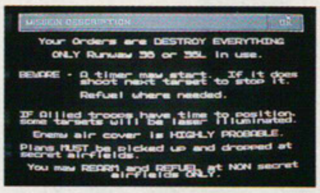
Using video-guided Mavericks, killing an enemy tank shouldn't be too much of a problem.



The enemy? You have a sidewinder locked on but the 'bogey' might be your own tanker.

GRAPHICS AND SOUND

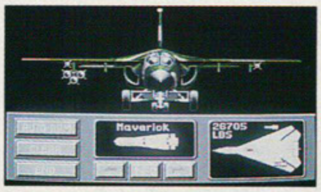
It's not the fastest or the most detailed flight sim to have appeared, but it moves fast enough and is detailed enough to be enjoyable. What it does have in its favour are the excellent out-of-cockpit views. There's even a weapon view which allows you to watch a missile go winging its way towards its target. These views and the great sound effects certainly make up for the slight loss of speed.



The mission briefing. After many flying hours you're ready to take on some tough jobs.

LASTING INTEREST

With 16 pre-designed missions and the ability to make up your own (and save them to disk, so you could swap them with a friend) there's bags of lasting interest built in.

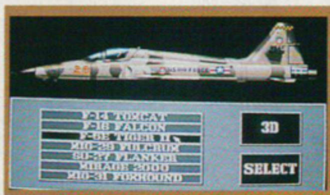


Once you know what you'll be up against it's time to fit the plane out accordingly.

JUDGEMENT

The ability to fly several planes and fly your own missions adds greatly to the game, making it well worth looking at if you fancy a new flight sim. It's not as good as some of the competition, but it's still a great game and fans of the genre will be well pleased.

GRAPHICS	8
SOUND	7
INTELLECT	7
ADDICTION	8
OVERALL	87%



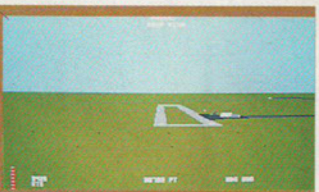
Choose your enemy...



...and do a recce. White planes are mid-air refuelling points.



Then start the mission. Engines straight up to 100%...



...and you're away. Here's a rear view of the runway.

KID GLOVES



Somewhere deep in the heart of the Amazonian jungle there beats a drum. Softly at first and then louder, the insistent beating awakens our hero, Kid, from a deep sleep. Last thing he can remember he was pulling on an old pair of boxing gloves he'd found in his uncle's study... now, here he is, surrounded by trees and shrieking parrots. There's something weird going on round here.



Confused and uncertain, Kid's troubles are just beginning - he's yet to visit strange scenes in the Ice Age, the pyramids of Egypt, the psychedelic West Coast of the 60's and more - but he's still wearing the gloves and with your help he may yet find his way back home !

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He's 39cm tall, house-trained and strobes his eyes. Accolade have two of these lovable darlings to give away: a full Omnibot is the first prize and an Omni Jnr (which has less knobs on it) is second prize. Naturally we want them to go to a good home. If you want it to be your home, then just answer the three questions below and one of these technological marvels could be yours.

PRESENTING ACCOLADE
Accolade is a US software house with an impressive track record on the Amiga, including *Test Drive, Jack Nicklaus Golf, Grand Prix Circuit* and many others. They've also got two big games out now and another on the way:

DAY OF THE VIPER
A game where altogether nastier robots battle for control of a vital defence base. Your sole Viper V has to take on the robotic hordes in a combination of strategy, arcade and adventure game.

THE CYCLES
The two-wheeled version of *Grand Prix Circuit*, reviewed on Page 46. High-speed mechanical action on tracks of the world.

BLUE ANGELS
The Blue Angels are the US Navy's aerobatic display team and in this soon-to-be-released simulation you can take part in the displays and learn all the tricks and thrills of wing-to-wing flying.

HOW TO ENTER
Write the answers to the following three questions on the back of a postcard or stuck-down envelope and send it to: Accolade Comp, *Amiga Format*, Beauford Court, 30 Monmouth Street, Bath, Avon BA1 2AP. The entries should reach us by April 13th and don't forget to include your name, address and phone number on the postcard.

QUESTIONS
1. What was "hand-built by robots"?
a) Ronald Reagan
b) the Thames Barrier
c) the Fiat Strada

2. What is the name of the robot in Lost in Space?
a) Robot
b) Oi you!
c) Neil

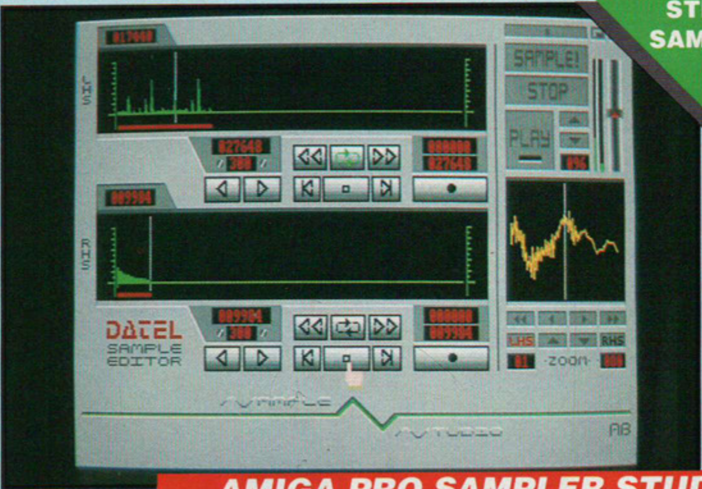
3. Which of these are robotic enemies of Doctor Who?
a) Robomen
b) Cybermen
c) Tinmen

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Employees of Future Publishing, Accolade and all robots are not allowed to enter. The judges' decision is final. No correspondence will be entered into. You have twenty seconds to comply with these rules. Thank you for your co-operation...



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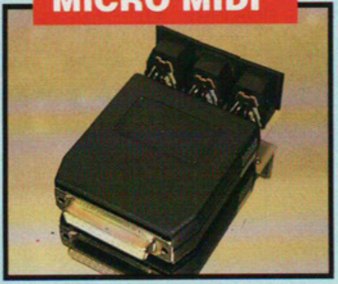
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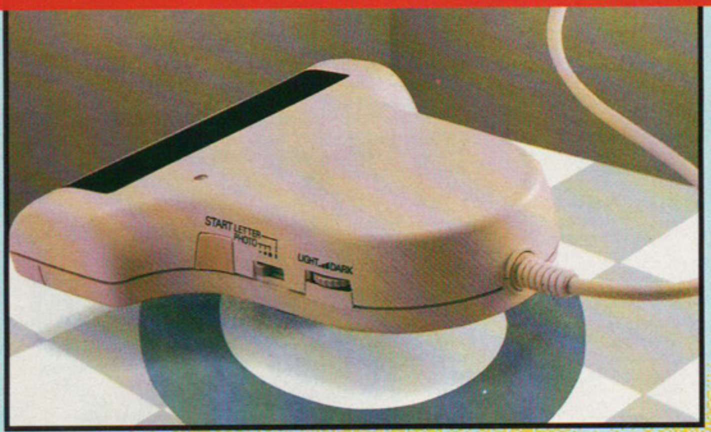


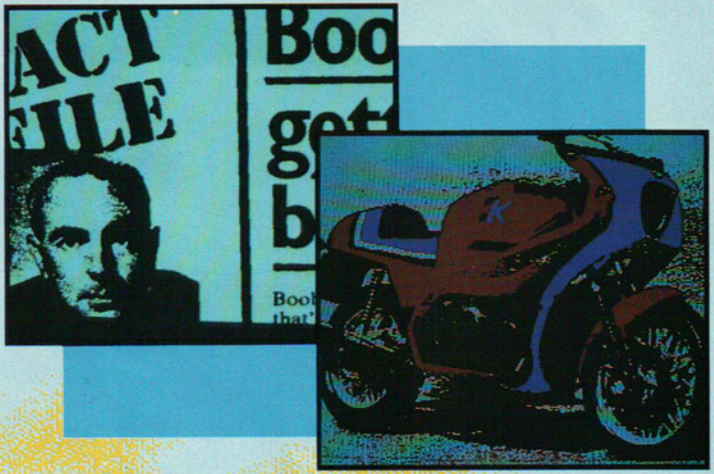


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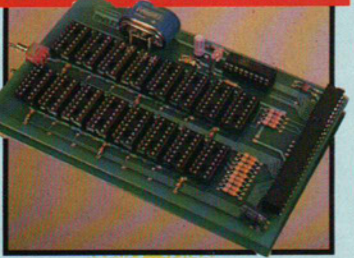
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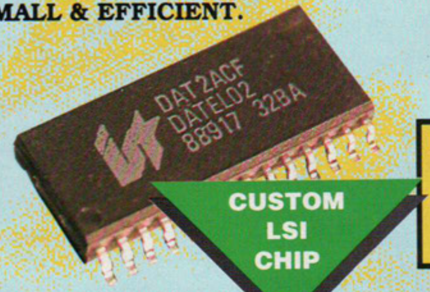


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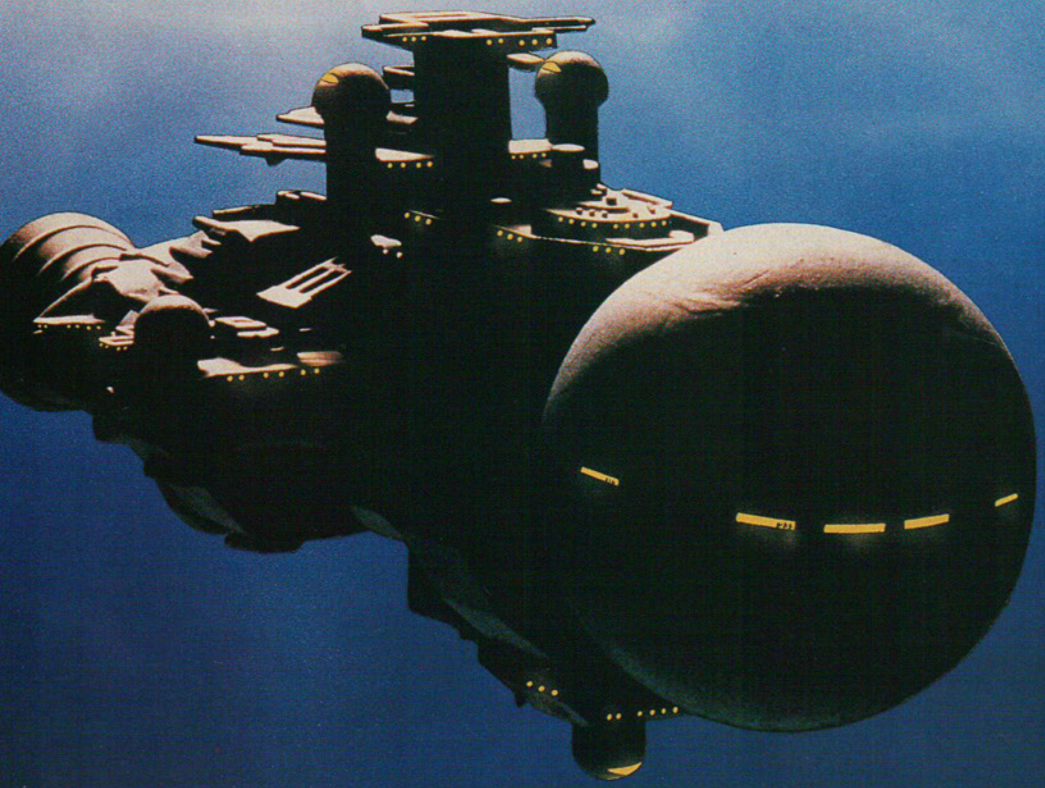
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DESIGNING THE MAIN SHIP

Top programmer **DAVE JONES**, author of Psygnosis' hits *Menace* and *Blood Money*, reveals more secrets of the art. This month:



THE WHOLE TRUTH ABOUT GAMES PROGRAMMING: 3

One of the most important things about an arcade-style game is the look and feel of the object the player is controlling. Ninety-nine percent of the player's attention will be focussed on controlling and watching this object, so any problems in the control method or any dire-looking graphics will soon put people off playing the game: so it's wise to put an awful lot of effort into movement and definition of the main character.

With *Menace*, we tried a few different spaceships before we found one that most people liked. The control method for moving a ship about the screen was, of course, to be a nice, simple eight-direction affair, because you can't really ask for too much variation in a scrolling shooter.

However, because we wanted to control the ship with the mouse as well as with the joystick, some inertia was added to the ship. This makes the mouse-controlled ship move more like a cursor would under mouse control.

The inertia is simply a snippet of code that prevents you instantly switching direction, and instead forces the ship to slow down in the direction it was going, stop, and then accelerate to its maximum speed in the chosen direction. It is not so noticeable on the initial speed of your ship, two pixels per frame, but try changing the speed in the source to, say, six pixels and then give the ship a test run. ➤



Shaping the Ship

This month's source adds the main ship and weapon code to last month's scrolling background. It was decided right at the start of writing *Menace* that the main ship should make use of the Amiga's hardware sprites. There are normally eight sprites available, each of which can be 16 pixels wide by any height in three colours. However, the wider-than-normal screen on *Menace* steals some DMA cycles from the sprite hardware allowing only six sprites to be displayed. This would seem to be enough for the main ship, if we allocated two sprites for the outriders, leaving four sprites for the main ship. So take a quick look at Figure 1. This shows the first ship we used in *Menace*, which, you have to admit, does look pretty dire! The restriction of three colours was detracting far too much from the main ship, making it look pale compared to the rest of the graphics.

The next step, then, was to use the sprite overlay technique that the Amiga allows, which basically means that two sprites can be combined as one but with 16 colours. This chopped us down to only three sprites maximum. By combining the outriders with the back of the ship as one sprite, and the front of the ship as another sprite, this left us with one free for use if we needed it (which in the end we did not). The result was the ship in Figure 3, which is the

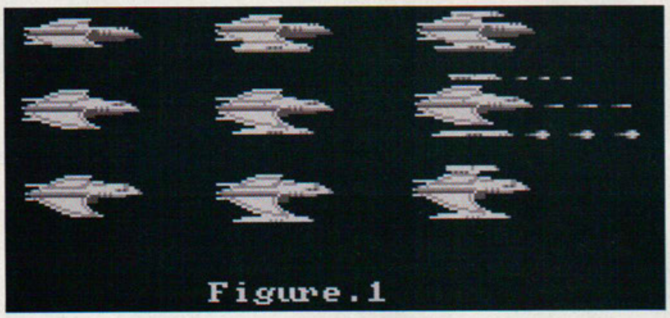


Figure.1

ship that appears in Menace. Figure 2 was another ship we tried, which was my favourite but the big publishers in the sky plumped for the other one, so I gave in...

Adding up the Anims

The boxes around the ship outline the actual size of the sprite that had to be stored in the game. At the back of the ships you will notice the spaces at the top and bottom of the box. This is where the outriders appear, attached to the ship. The ship can be viewed straight on, or tilting up or down. Each weapon added therefore required another three animations to be drawn.

There are also two extra weapons in the form of cannons and lasers, making a total of nine animations, plus the ship with both weapons attached bring us to the total shown of twelve animations. The outriders have a possible five directions but rather than store the animation for every possible combination (12x6 = 72 animations) of ship with outrider, the outriders are stored seperately and drawn into the extra space left at the back of the ship every frame in the game. This is provoked by the usual speed to memory trade-off.

Creating the Code

Now on to this month's source code from the Coverdisk. The source has the following functions implemented since last month:

- Inertia ship movement
- Overlayed hardware sprites
- Joystick read
- Mouse read
- x,y to hardware sprite coordinate conversion
- ship animation

The ship is 32 pixels wide, and will therefore need two hardware sprites as a hardware sprite is a maximum of 16 pixels wide. The ship, however, contains 16 colours which is only possible by overlaying hardware sprites, which brings the number used to four. Figure 3 shows the *Menace* ship with the size box drawn around it. The back of the ship is 44 pixels high to accomodate the outriders: the front of the ship is 22 pixels high. The file **ships.s** on the disk contains the hardware sprites in source format. In this file you will see labels named **ship1** up to **ship4**. These correspond to the following basic designs:

ship1 – basic ship, no weapons
ship2 – ship with cannons
ship3 – ship with lasers
ship4 – ship with cannons & lasers

Each ship also has three sets of data: **shipN.1**, **shipN.2** and **shipN.3**, where the **.1** is the ship tilting up, **.2** is the ship side on and **.3** is the ship tilting down. In the source you will see a DC.L 0 statement at the begining and the end of each piece of data for a hardware sprite. The one at the beginning will contain the two control words defined in the hardware manual that describe the sprite's x,y position along with overlay information. The long word 0 at the end signifies the end of the sprite. The way the control words are layed out is quite messy, with bits and bytes in awkard places. The routine in the source called 'xy to sprite' takes a normal x,y pixel position in a couple of registers and returns the long control word in the correct format. A small routine like this will always come in handy from project to project.

We can work out how many bytes a ship animation takes with the following method:

back of ship = 2 bytes wide * 44 high * 2 planes = 176 bytes + 2 long words (control) = 184 bytes

front of ship = 2 bytes wide * 22 high * 2 planes = 88 bytes + 2 long words (control) = 96 bytes

ship animation = (184+96)*2 (due to overlaying) = 560 bytes ➤

PAINTING PROBLEMS

Many questions programmers receive are of the form 'How do you get graphics from *DPaint* (which most people use) into the game?' A lot of a project's time is devoted to writing programs that grab the graphics and store them in the desired format. For *Menace*, programs were written that converted brushes to hardware sprite format, blitter format and raw screen format. These programs all involved a common IFF reader, along with code to save out the graphics to a DOS file.

These type of utilities are essential in writing a game, and luckily they are appearing in many different guises in the public domain, which should help you to start. Eventually you should sit down and write a flexible conversion program that can generate ST or PC format graphics for any other versions of a game that may be required. For example, here is the menu for our own conversion program (written in C) that has been developed over the years:

```
PC-ilbm2raw v1.2 (c)1989 DMA Design

Usage: ilbm2raw [options] filename [output filename]

Options available are :-

 -A   Sets machine type to AMIGA
 -b   Sets Bit Plane(s) Ignore for any of the bit planes
      Followed by numbers between 0 & 7 to select which bit
      plane(s)
 -B   Switches OFF Body generation
 -c   Switches OFF Color generation
 -C   Switches ON CBM64 bit-mapped image generation
 -d   Switches ON diagnostics
 -E   Sets machine type to EGA 16 colour
 -g   Sets grid pick up operations, 16x16 graphics picked up
 -G   Sets machine type to CGA
 -i   Switches mask Inversion ON, masks become the NOT OR of
      all the planes
 -m   Switches on mask as an extra (last) plane
 -M   Followed by width (in pixels) for grid operation
 -N   Followed by height (in pixels) for grid operation
 -r   Switches On ROW major order for grid,
      (default is column major order)
 -S   Sets machine type to ST
 -s   Switches ON source generation
 -V   Sets machine type to VGA 256 colour
 -Z   Switches OFF the Zero Check for grid operations
      ie. All zero blocks are saved out in grid operations
```

As you can see, the list is quite comprehensive: this took a while to write, but now means we very rarely have to write graphic utilities, because working from IFF screens means we can convert to most machine graphic types.







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This figure of 560 bytes will crop up quite often in the source to calculate where a certain ship animation is. The ship animation routine for tilting the ship up and down works by storing the animation address for a particular ship's side-on view: when the joystick is pushed up or down another variable is set to either –560 or +560 (normally 0 for the side-on view) which automatically adjusts the animation that is viewed. Changing the animation address to the ship with cannons for example, will still tilt the canons up & down as the offset from the side-on view to tilting up or down is still +/- 560.



Figure.2

Reading the Input

The joystick/mouse is read every frame, and the ship moved at this rate. Using hardware sprites makes this very simple no matter what speed the game runs at. *Blood Money* runs every three frames, but the players' ships are updated every frame. This has the advantage that even if a game slows down occasionally the player can still zip about at the same speed, so the slow-down is much less noticeable. This is accomplished by making the ship movement integrated into a vertical blank interrupt routine. *Menace* does not require this as the game runs in a frame anyway.

The joystick read routine is quite simple, the basics being explained in the hardware manual. The mouse routine was included to emulate the joystick if a joystick was not available. It is not a true mouse read routine as it only checks if the mouse is being moved up/down/left/right. If so, it modifies the results the joystick routine returns, making it look as though the joystick had been pressed in a certain direction. This method does away with having a mouse/joystick option in the game as you can use either at any time. A full-blown mouse routine would return information on the direction and speed of the mouse, and it is not too difficult to modify the routine to do this if you require this in your own game.

Making Motion

The 'moveship' routine is the main part of the ship code. Its main dealings are with the inertia on the ship. If, for example, you are moving right at three pixels at a time, you cannot simply press left and go left at three pixels at a time. A vector is used to gradually reduce and then increase your speed in the form +3,+2,+1,0,-1,-2,-3. This leads to a much more realistic feel to the movement on the ship. Small touches like this often make the game that bit more playable.

Tricks and Treats

Although only eight hardware sprites are usually available on the Amiga there are some tricks worth mentioning that can stretch this amount a little bit.

After a hardware sprite has been displayed it can be used to display some new data one scan line after the end of the last. For example, if the ship in *Menace* was at the top of the screen, then 45 pixels down (height + one scan line) we could draw the ship again if required on a different x position (or any y position > 45). This we could repeat all the way down until we ran out of space. The obvious drawback with this is that objects would always be in rows across the screen: they could not pass over each other vertically.

Other hardware sprites can cross over each other, though, so if you had some clever code that manipulated all eight sprites and sorted out sprites by saying 'This object here is further down the screen than this one, so I can re-use the same hardware sprite to display it, but this object has the same Y so it will require a different hardware sprite' you can in effect 'multiplex' sprites. In some instances you can multiplex 64 sprites down to the Amiga's eight depending on the restrictions you apply to their movement. This technique was extremely well used on the C64 and is now being used to some good effect on the Amiga. *Battle Squadron*, for example, uses hardware sprites for all the enemies' bullets and the players' firepower, which looks in excess of 32 sprites being displayed at once. ■

■ That's my ramblings over for this month. Back next month with some more juicy source.



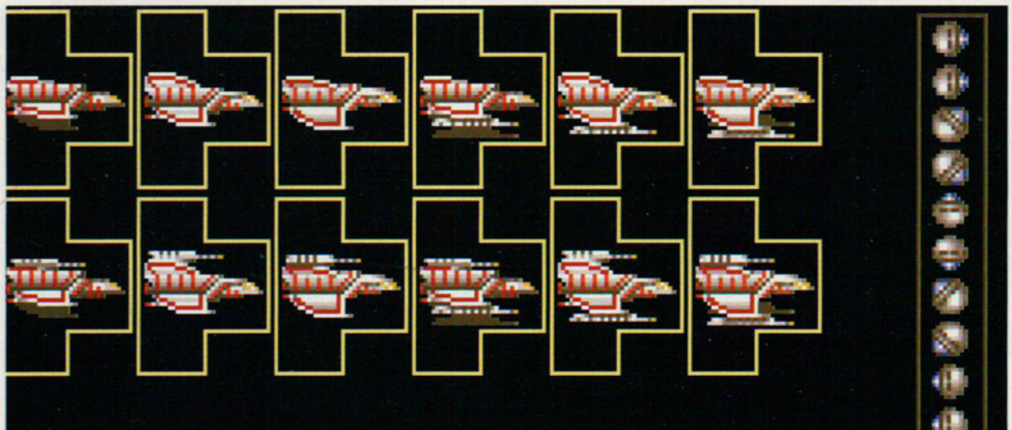
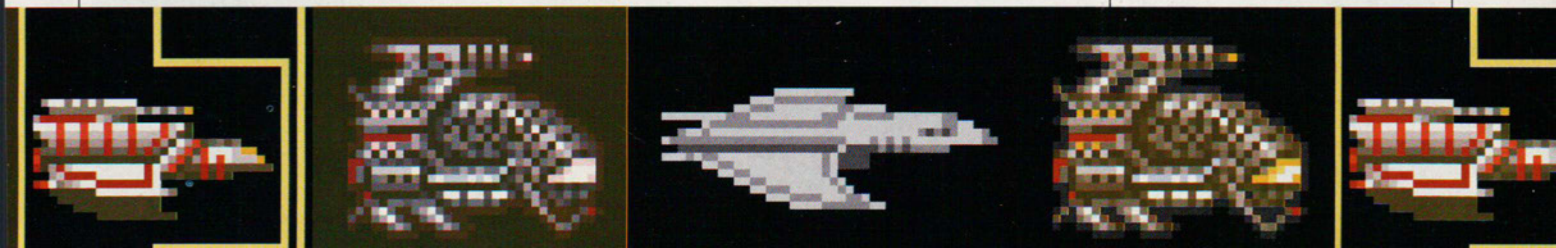
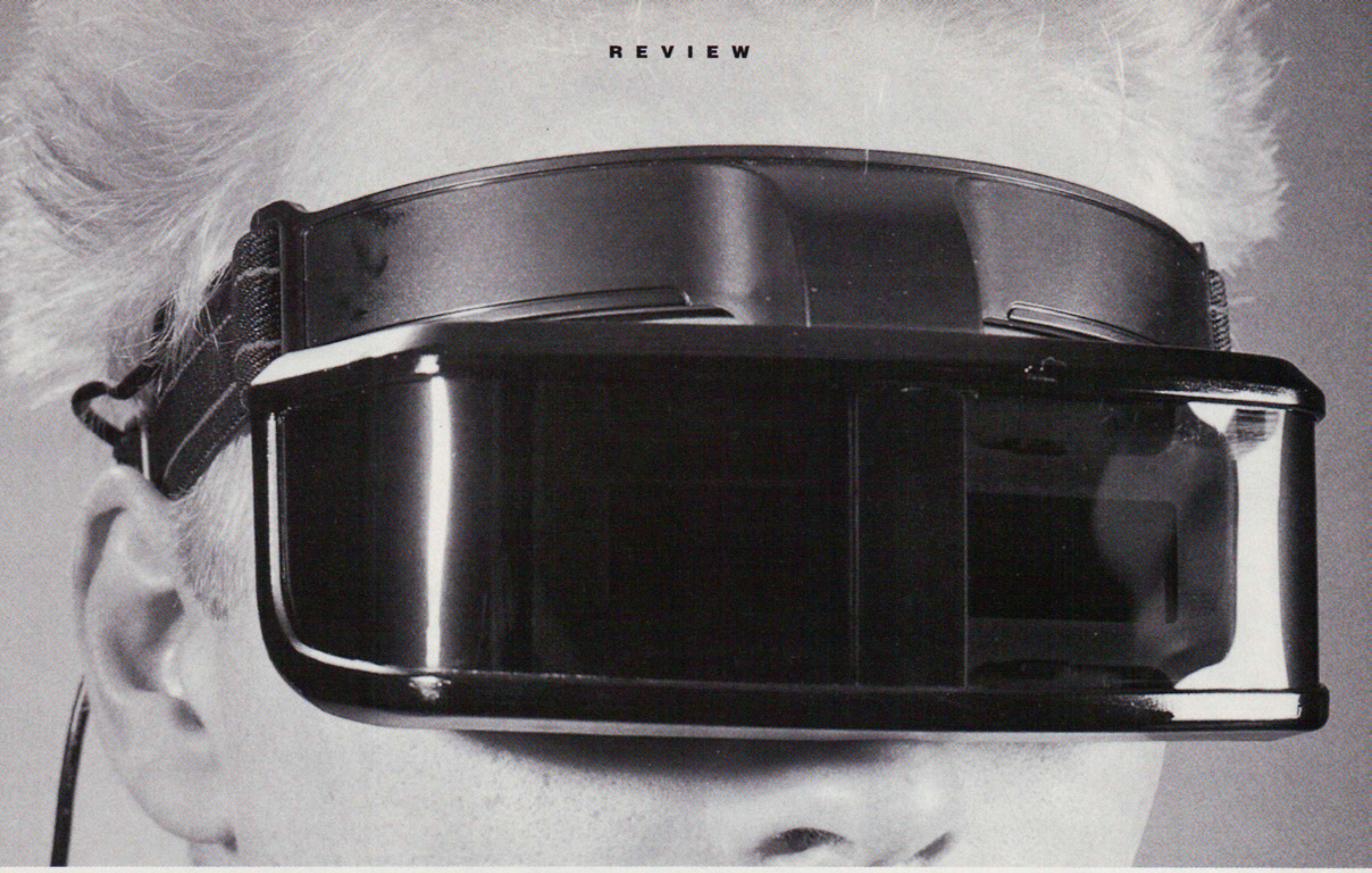


Figure.3





THE NEXT DIMENSION

Bored with the flat world? Why not enter the third dimension with Third Coast's X-Specs 3D? **JASON HOLBORN** spec-ulates speciously on the spec-tacular.

Developers have been trying for years to produce holographic 3D on a flat computer screen, with little luck: but now Amiga owners can now explore the world of 3D graphics with Haitex's X-Specs 3D. The purpose of X-Specs is to allow any Amiga to produce true stereoscopic images and display them on a standard Amiga monitor. The X-Specs package consists of a single pair of glasses, an interface to connect two pairs to Joystick Port 2, and a single disk containing a selection of programs to show what the X-Specs are capable of.

How They Work

Human vision works by combining what each eye sees into a single image. Because each eye sees the outside world from a different position, the images viewed are not identical and the brain can combine them into a stereoscopic image, complete with 3D depth. So if you shut one eye, the image you see is only in 2D.

The brain therefore needs two separate views of the same object, the first offset slightly from the second. The lenses of the X-Specs are a pair of transparent LCD shutters which can be turned on or off by the Amiga. When the shutter is turned on, the liquid crystal darkens, blocking the passage of light. All this activity is controlled by the computer, therefore allowing the specs to be synchronised with the video display. On every odd fiftieth of a second, the computer displays the image for the left eye, and simultaneously, the left shutter in X-Specs clears while the right shutter darkens. Then the right eye shutter clears, the left shutter darkens and the image for the right eye is displayed, and so on. Simple?

Software Support

The X-Specs package comes complete with a single disk filled with programs. Most immediate of all these is *Space Spud*, a *Star Raiders*-like arcade game set in deepest space. Meteorites fly towards you at fantastic speeds as your ship ducks and dives: the 3D effect is breathtaking.

Also on the X-Specs disk is a utility program called *Make3D*, which attempts to convert any standard IFF picture into a stereoscopic image. To give you an idea of what the program is capable of, the disk also includes a selection of impressive demo pictures.

Third party software support is limited at the moment, but Haitex (the American producers) claim that many more packages are promised. Probably the most major of all applications that support X-Specs is NewTek's excellent *Digi-Paint 3* HAM paint system. With *Digi-Paint 3*, your HAM paintings can enter the third dimension.

Several top ray-tracing packages have been modified to support X-Specs. Among them are *C-Light*, *PageRender 3D* and the popular *Turbo Silver* program from Impulse. These will automatically render two separate views of the same image which can be combined into a stereoscopic image using the *Make3D* tool.

X-Spec Uses

Haitex claim that the applications for such a device are unlimited. Already X-Specs are being used professionally for a host of applications, ranging from illustrating human anatomy at the UCLA School of Medicine, to art, architectural design and space flight!

The potential within games software is phenomenal – just think how a device such as X-Specs could revolutionise simulations software such as flight simulators and car games. Several top games houses in the States are rumoured to be planning X-Specs-compatible software...

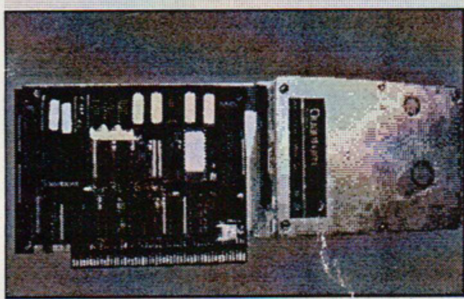
Conclusion

Although your eyes can take a while to adapt to X-Specs, the 3D effect works surprisingly well. A word of warning, however. Continued use of X-Specs can cause considerable strain on the eyes. Unless you own shares in a company producing headache tablets, you're strongly advised to restrict your use of X-Specs to small doses!

The key to the success of the X-Specs is dependant on one single factor – software support. If the promised software from both Haitex and third party developers does arrive, then the X-Specs are well worth investigating – otherwise, they could become just an expensive novelty.

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VIRUSX 4
Banish those viral blues forever with the latest and greatest virus killer. As always *Amiga Format* puts your Amiga's health first.

SLEEPY
Fed up of seeing the 'zz' cloud every time you open a folder, access a disk or perform an operation that requires the Amiga's full attention? Well, now you can create an alternative sleepy sprite.

DJ'S LOCKER
Programmer extraordinaire Dave Jones guides you once more through the murky depths of *Menace*.

WORKBENCH HACKS
Another selection of the tempting, tremendous and plain trivial. No clues, no blues, no ruse. Well, perhaps just a teensy-weensy bit of all three.

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BACK UP YOUR COVERDISK IMMEDIATELY

DON'T KNOW HOW? SEE PAGE 80 FAST!

DISK EXTRA

Where else can you get a magazine and a disk containing almost 900K of programs for under £3? RICHARD MONTEIRO guides you through the Coverdisk's stunning offerings.

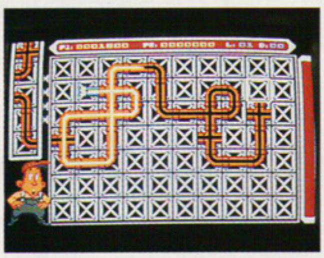
PIPE MANIA

PROGRAM: EMPIRE
FILES: PIPELINE, PIPELINE.DOC, PIPELINE.BIN

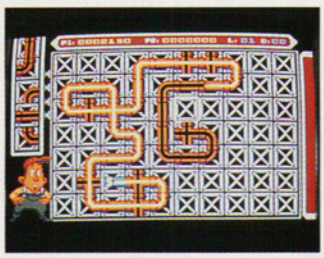
You're on no ego trip: you're not the Earth's sole survivor out to prove that you can wipe out seven trillion mad-as-Damien aliens when everyone else failed; you're not about to go into a pulsating pit and battle obscenities from the grave because no one else dared; and you sure as hell aren't about to pilot an F99999 Deathdealer because no-one else knows how. So what are you about to do? Would you believe construct pipes?

Sure, it's a job. But why did you have to get picked? Well, frankly, someone's got to do it. And now that you've got yourself in this mess, you'd better find out how to survive without flooding the whole of Wales. On second thoughts, you don't need any tuition – you're perfectly qualified.

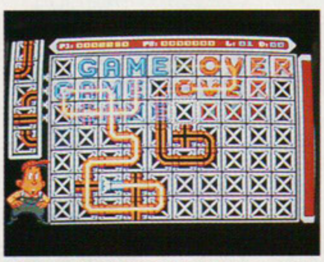
You've a few seconds to lay down as much piping as possible before the sluices are opened.



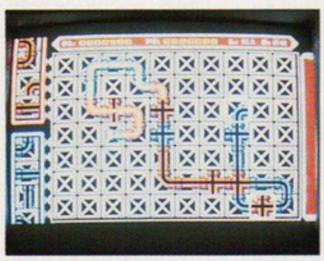
The flooz is flowing and you're not laying pipes fast enough. Someone's going to get soaked.



Pipes are picked from the left hand side of the screen and plonked down on the main area.



Fantastic flooz flowing fun is to be had in two player mode.



Ever had that sinkin' feelin'...

Even when the water flows, you can still lay down more pipes. The idea is to lay down enough piping to keep yourself from a soaking.

In principle this sounds simple. Unfortunately all manner of differently-shaped pipes are handed to you. It's your job to fit the pipes together and make one long throughway for the water. Pipes needn't be laid out sequentially – and, indeed, the way in which pipes are given to you means that it is often prohibitive to attempt sequential pipe laying. Forward thinking is what's needed. Objects dotted around the play area are there to help and hinder. It's for you to discover which do what. That, in a paragraph, is all there is to *Pipe Mania*. It is a childishly simple concept, but – like the great *Tetris* – is a game that will hook you from the start.

Pipe Mania has 36 increasing complex levels; the playable demo on the disk comprises three levels for you to attempt within a limited time. The full version has no time limit, a level being completed when the flooz stops flowing.

Getting Going

Pipe Mania can only be run by resetting the computer and inserting the Coverdisk into the drive. A menu will appear asking you what you wish to run. *Pipe Mania* is the first option on the list. Simply press F1 on the keyboard to start the game. Don't try to run *Pipe Mania* from the Workbench – it simply won't work.

Leaving *Pipe Mania* to its own devices will result in a help screen appearing. Extra information can be gleaned by reading this. If you can't wait that long, simply press the fire button on the joystick plugged into Port 2 a few times. You do have a joystick, don't you? And it is plugged into Port 2?

VIRUSX 4.0

PROGRAM: PUBLIC DOMAIN
FILES: VIRUSX, VIRUSX.DOC

As ever, *Amiga Format* is first not only to provide you with exclusive details of the latest virus killer but also to hand you the complete virus busting utility on the Coverdisk. *VirusX 4.0* is the most up-to-date and powerful package of its genre.

Viruses fall into two categories: boot block and other. Boot block viruses are so called because they live on the first two sectors of a disk (the boot block). When a disk is bootable (like Workbench and the Coverdisk), these sectors tell the operating system where to go to load AmigaDOS code. A boot block virus will intercept these pointers and install itself into memory before allowing the system to continue looking for AmigaDOS code.

The other viruses (often called link viruses) are much less common, but trickier to deal with. These viruses will attach themselves to, and sometimes completely replace, the existing programs on a disk.

VirusX will deal with all currently known viruses.

SCA, Byte Bandit, Revenge, Byte Warrior, North Star, Obelisk Softworks Crew, IRQ, Pentagon Circle, SystemZ Virus Protector, Lamer Exterminator, Graffitti, Old Northstar, 16 Bit Crew, DiskDoktor and the Australian Parasite have no chance against *VirusX*.

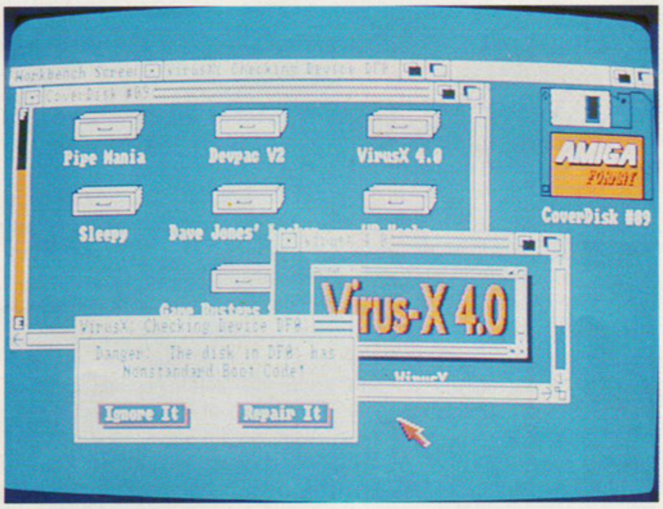
Live safely, install *VirusX* now!

Getting Started

From the selection menu press key F3. The documentation file will appear before the virus killer runs. Press the Esc key to continue. *VirusX* will install itself and immediately get to work checking the disks in all connected drives. Don't worry if *VirusX* reports your Coverdisk as having a non-standard boot block. This is perfectly normal. See the warning which is printed on the following page.

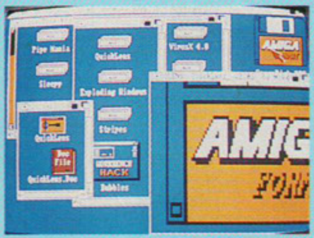
Whenever a disk is placed in a drive, *VirusX* will check the boot block and report back to you on any unusual findings.

Please note that you can run *VirusX* from the Workbench simply by entering the VIRUSX 4.0 folder and double-clicking on the VIRUSX program icon. Ensure you read the documentation file provided before you try running *VirusX*.

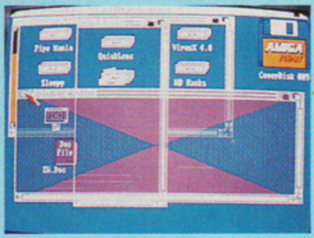


WORKBENCH HACKS

Grin at the genius, groan at the grotesque, grimace at the disgrace – whatever you do when you enter the WB Hack zone you can be sure it will come as a surprise. You can only run the Workbench Hacks from... the CLI... err, no, from the Workbench.



Lookin' at you, Workbench.



Watch out for explosions!



***Stripes* will add, erm, stripes...**

QUICKLENS

PROGRAM: MIKE BERRO
FILES: QUICKLENS, QUICKLENS.DOC

Take a good look at your Workbench screen. Isn't it astounding? Okay, putting your nose on the screen isn't practical – use *QuickLens* to magnify any part of the Workbench screen by two or four times. The window displaying the magnified image can be any size. An invisible gadget towards the bottom left of the window can be dragged in any direction by the mouse pointer. Change magnification level by clicking with the right mouse button when the pointer is on the *QuickLens* window.

EXPLODING WINDOWS

PROGRAM: ED SCHERER
FILES: EW, EW.DOC

The concept is ridiculous of course – mind boggling, in fact. You just don't have exploding windows. True, the program makes windows open and close in a more exciting fashion, but explode... that's going too far. Judge for yourself.

STRIPES

PROGRAM: PD
FILES: STRIPES, STRIPES.DOC

You've probably seen the effects of Copper lists before, although you may not have realised what they were. Essentially the Copper chip can produce wonderful colour banding. *Stripes* can only be run from the CLI. Double-click on the CLI icon in the Sleepy folder and type:

```
CD DF0:
CD "WB HACKS"
CD STRIPES
RUNBACK STRIPES 0 2
```

The parameters following *Stripes* are fully explained in the supplied documentation file.

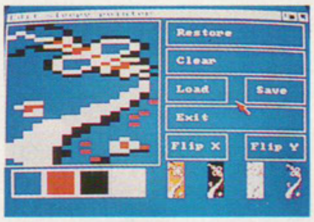
BUBBLES

PROGRAM: PD
FILES: BUBBLES

You're getting no clues as to what this one does. None at all. Except for the fact that it's not a jacuzzi simulator...

SLEEPY

PROGRAM: MARK SMIDDY
FILES: SLEEPY, SLEEPY.DOC, EDITSLEEPY, SLEEPY SPRITE, TEAPOT SPRITE, CLI



That's the last snore you'll see from your Amiga in a while.

The idea behind *Sleepy* is to allow you to create alternative sleepy sprites to the 'zz' cloud that appears whenever the Amiga fancies a quick kip.

Two programs are provided: *SLEEPY* and *EDITSLEEPY*. The former lets you install a new sleepy sprite while the latter lets you design new sprites.

A couple of demonstration files are also present on the disk.

EditSleepy requires no explanation as all the gadgets that appear when you run the program are perfectly straightforward. Simply design your new sprite by holding down the left mouse button while moving the mouse pointer inside the edit box.

Getting Started

Pressing F4 from the menu screen will install the demonstration sprite called Sleepy Sprite and plonk you into *EditSleepy*. A better idea is to load the Workbench, open the SLEEPY drawer and run *EDITSLEEPY* by double-clicking on its associated icon.

After designing a few sprites and saving them, quit out of *EditSleepy* and double-click on the CLI icon provided in the SLEEPY drawer. Type the following when the CLI prompt appears:

```
CD DF0:
CD SLEEPY
RUNBACK SLEEPY filename
ENDCLI
```

Please note filename is the name of a sleepy sprite. For instance, line three could read `RUNBACK SLEEPY "TEAPOT SPRITE"`.

A gadget will appear towards the top of the screen once *Sleepy* can been run from the CLI. This means the new sleepy sprite is up

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and running. Try performing some disk operation (because disk operating tasks require a considerable amount of processing time to get anywhere) to see it in action. Clicking on the close-gadget icon will return everything to normal once again.

Two Brief Notes...

It's not possible to run *SLEEPY, SLEEPY SPRITE* or *TEAPOT SPRITE* from the Workbench.

When copying *Sleepy* to another disk, ensure you copy ARP.LIBRARY from the LIBS drawer on the Coverdisk to the LIBS drawer of the new disk.

DEVPAC V2

PROGRAM: HISOFT
FILES: DEVPAC2.DOC, GENAM2, GENAM2.INF, GENIM2, MONAM2, LIBFILE.MONAM, HELLOWORLD.S

Here it is! The development tool for the Amiga used by programming teams worldwide. HiSoft's *Devpac 2* combines a full 68000 macro assembler, complete screen editor, powerful disassembler and debugger, and fast linker. In this fantastic useable demo you can see and use almost all the features that developers rave about. Programs are typed in using an intuition-based editor and assembled from the very same environment. And, to top it all, your compiled programs can be executed and subsequently debugged from within *Devpac*. It's this unique friendly development environment that makes Hisoft's package such an instant attraction.

On the disk you'll find the a fantastic useable demo of the *Devpac* editor and assembler together with a stripped-down version of MonAM (the debugging tool that forms part of the package).

There is so much to this package that the entire disk pages could easily be filled with information about it. Instead, there's a comprehensive help file which *must* be read before starting.

Getting Started

To load *Devpac*, reset the computer and press key F2 when the selection menu appears. You will thrown into the *Devpac* editor. From here you can edit source files or load the demo file, HELLOWORLD.S, from disk. You can also compile, debug and run programs from within the same environment. See the documentation file for full details.

WARNING!

VirusX will inform you that the *Amiga Format* Coverdisk has a non-standard boot block. Ignore the warning; the Coverdisk uses a custom boot block which you can see in action as a scrolling message when the disk boots. Don't under any circumstances let *VirusX* destroy the Coverdisk boot block. Also, take extreme care when using *VirusX* on commercial software – many games have custom boot blocks which *VirusX* will treat as suspicious. If you let *VirusX* to destroy a boot block on a commercial piece of software, you may never be able to run the software again. Failure to comply with these instructions, and the extensive documentation on disk, can lead to destruction of valuable software. *Amiga Format* will not be held responsible for your mistakes!

DAVE JONES' LOCKER

PROGRAM: DAVE JONES
FILES: MOVESHIP, README.DOC

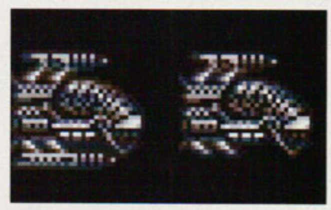
Yet more of Dave Jones' programming tricks revealed. See the article on Page 63 for full details. This month Dave explains how to create sprites and overlay them on the scenery given away last issue. You'll find all the source you need to do the same on the disk.

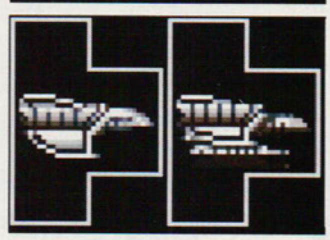
Source isn't much good if you haven't got an assembler, which is why there's a compiled version of the scrolling level plus the animated sprite on the disk. Please note you will need last month's source and this month's source to create the demo on this disk.

Getting Started

From the main menu strike function key F5. The demo showing off the scrolling landscape and sprite will appear. Moving the mouse will move the sprite. Pressing the left mouse button will exit the demo.

You can, if you wish run the demo from the Workbench by double clicking on the file MOVESHIP from within the DAVE JONES' LOCKER drawer. The other two source files, SHIP.S and MOVESHIP.S, can be loaded into an assembler like Devpac 2 or Argasm and compiled.





GAMEBUSTERS SPECIAL

What a treat! More monstrous game hacks from master pokester Justin Garvanovic. And what a selection; three of the latest raves laid bare. The pokes can either be run by pressing the appropriate key from the main menu or by loading the Workbench and entering the GAMEBUSTERS SPECIAL drawer. Although none of the hacks write to disk, play safe and keep all your disks write protected.

OPERATION THUNDERBOLT

FILES: OPERATION THUNDER POKE

It's infinite everythings all round with this stunning cheat: bullets, clips, rockets, energy. Just press Y or N to answer the questions that appear and insert the original game disk in the drive when requested.

STRYX

FILES: STRYX POKE

If you can't win with all the cheat options available in this poke, you're doomed to a life of misery. Answer Y or N to infinite energy, bullets, speeder bike fuel, jet pack fuel and mining craft fuel. Phew! What a way to win.

GHOULS 'N' GHOSTS

FILES: GHOULS 'N' GHOSTS POKE

There's infinite time, infinite credits and infinite lives to be had with this poke. Also available is the ability to switch off collision detection, which is handy for survival in US Gold's conversion of the classic Capcom coin-op.







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USING YOUR FORMAT DISK

IMPORTANT! Before using your *Amiga Format* disk, you should make a back-up of the master disk as soon as possible.

BACKING UP YOUR DISK

For many reasons, it is important to make a backup of the Coverdisk as soon as possible. Copying the disk may sound like a complicated task suitable for techno-buffs only, but it is surprisingly simple provided you read the following instructions carefully:

1. First, turn on your machine and load Workbench. Once the Workbench screen appears and the disk-drive light goes out, remove your Workbench disk and insert our Coverdisk.

2. Next, click once on the Coverdisk icon and then press the right mouse-button and the Workbench menus will appear. Now, while keeping the right mouse-button depressed, move the mouse pointer over to the 'Workbench' heading and a menu will drop down. Move the mouse pointer over the 'duplicate' menu option and then press the left mouse-button.

3. After a few seconds' disk access, the Workbench DiskCopy tool will be loaded and run. Now just follow the on-screen prompts and your *Amiga Format* Coverdisk will be copied to a backup disk. When the machine asks for the destination, insert your blank disk into the drive. Further instructions are in the user's guide that comes with your Amiga.

USING THE PROGRAMS

All programs on the *Amiga Format* disk are specially set up to make them as easy to use as possible. If you can use the Amiga's Workbench then you can use our Coverdisk! If you do have problems with a program, full instructions on loading and using the programs are included in Disk Extra and these should get you up and running. If you still have problems, you should read the documentation file (.DOC) that is included with every program. To run any of the programs on this month's Coverdisk, follow a simple procedure: unless specified differently within Disk Extra, just double-click on the program's icon on the Workbench and it will load and run. Full details on how to use the programs once they have loaded are included as a documentation (text) file with the program.

To display a documentation file, just double-click on the appropriate .DOC file and a window will cpen containing the file's contents. Pressing the space bar will advance a page at a time.

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DISK EXTRA HOTLINE

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Between 4pm and 6pm on weekdays only

Flummoxed by files? Dumfounded by disks? Paranoid about programs? If you have a problem with the disk – and you're sure the disk is in full working order – phone 0225 765086 with your query. State the model of your machine and anything you've got attached to (or plugged inside) the computer. For problems with disks before Issue 5 phone *Amiga Format* on 0225 442244.

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IS YOUR DISK FAULTY?

We have done our best to check that the programs on the *Amiga Format* Coverdisk are simple to use, error-free and have no known viruses. However, we cannot normally answer telephone queries on using the software, and we do not accept liability for any consequences of using the programs on the disk.

If your *Amiga Format* disk is faulty – and out of the tens of thousands duplicated, some are unfortunately bound to be – you should send it back for a free replacement within a month of the cover date to:

Amiga Format
April Disk
Discopy Labs
Unit A, West March,
London Road, Daventry
Northants NN11 4SA.

If your Amiga refuses to accept the disk, try using the DISK-DOCTOR utility on your Workbench disk to rescue it before sending it off for a replacement. Full details of *DiskDoctor* can be found in the user's manual that came with your machine.

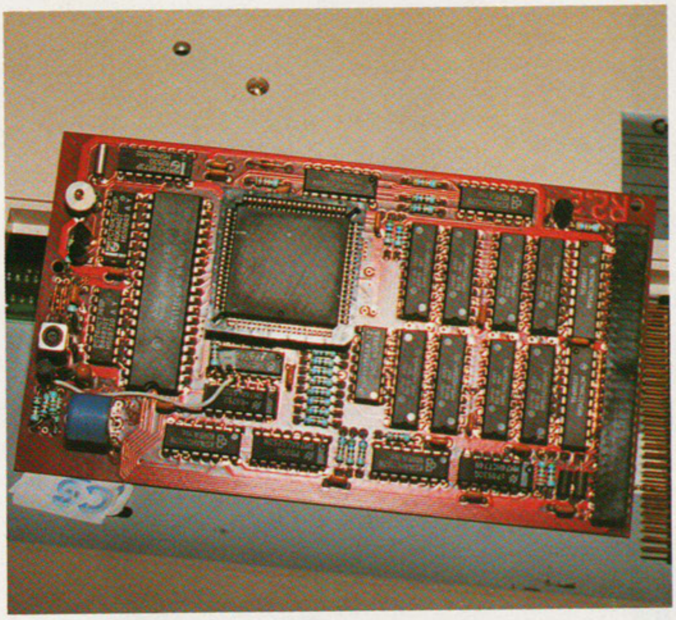
WARNING!

The game cheats on this month's Coverdisk are straightforward to use, but please read the instructions in the magazine, and on the disk. Just do it! If you screw up your game disks – or indeed, any other disk – because you failed to read any documentation, it's your fault. You're on your own. And you're getting diddly-squat from *Amiga Format*. You've been warned.

WE WANT YOUR PROGRAM

If you've got any programs for the Amiga which you think other readers would find useful, interesting or amusing, we'd like to know about them.

1. Make sure your program is foolproof to use. 2. Create a file called README.DOC on the disk which explains exactly how to use your program. 3. Fill in this form, sign it, and send it without delay to: CoverDisk Software, *Amiga Format*, 4 Queen Street, BATH BA1 1EJ
You could win a share of £800 prize money for the best programs each month.



BIG BLUE AMIGAS

Thought you had to splash out the Earth for an A2000 and Bridgeboard to run all those PC programs? Well think again. **ANDY STORER** previews KCS's Power PC Board for the A500...

The Amiga 500 is soon to gain its first hardware-based PC emulator in the compact form of the Power PC Board from Dutch developers KCS. Best known for their Power Cartridge RAM freezer for the C64, KCS are a small Dordrecht-based company comprising programmer Peter Verhey and Managing Director Krijn Kolff. Between them they are set to launch a complete PC on a card that comes with 1MByte of RAM and nearly £150 worth of PC software for just under £300.

While the price might seem somewhat amazing – perhaps indicating they expect huge volume sales – the means of achieving PC emulation adopted is equally surprising. For the Power PC board plugs directly into the Amiga's RAM expansion slot, a port previously thought unuseable for anything other than dynamic memory chips. Understandably, the team are reluctant to disclose how they managed to utilise the port in this way, only admitting that Commodore US were amazed.

Whatever the means employed, the reasons are simple. At the heart of the move is a wish to offer the Amiga owner fast PC emulation at an affordable price and in the process combine the reliability of MS-DOS with the company's 'plug in and run' philosophy. As Verhey points out, "There's still a feeling that the A500 can't be used for serious work – there's a view it's too unstable. If users want the reliability of a PC system then they need look no further."

At the heart of the hardware is a custom chip that transmits all PC data from the on-board 8086 to the Amiga's 68000. This data is then in turn sent to the desired channels – disk drives, serial and parallel ports and display screen.

The trick in optimising speed is to transmit data directly to the screen rather than through the usual means of BIOS routines. The 68000 translates this memory directly and puts the information on the monitor.

Since the PC Power Board treats all screen handling as direct screen I/O, it even promises full compatibility with PC programs that bypass the BIOS and hit the screen hardware directly.

Card Tricks

The neat 6"x3" card has been some fifteen months in development and holds a NEC V30 processor, a custom chip, a clock and 1Mbyte of RAM chips. The V30 is a 16-bit 8086 clone running at 7.14Mhz and the BIOS opted for is Phoenix, the world standard for MS-DOS computers. The onboard RAM chips included are to supply both the PC and Amiga with an extra 1/2 MByte. If you don't want to use the PC emulation you can configure its associated memory as a RAM disk device the Amiga can address. This, too, is quite ingenious as the normal Amiga operating system isn't capable of switching between RAMs in this way.

To get up and running in PC mode first requires a simple menu-driven configuration program to be run which determines the video mode, disk drives and attached peripherals to be used. This is achieved via a short GFABasic installation program which allows the hardware to address all the necessary devices. Because the PC card can't be connected to dedicated PC cards you can't use the special cards needed for PC scanners, fax and custom mouse cards. But Microsoft mice, joysticks, modems and printers are all supported.

Configure it Out

So, the configuration program prepares the Amiga to handle all I/O functions, data being streamed out of the board and to the 68000 which then sends data on to the desired channel. First of all you need to specify which drives will be employed as PC devices. Here you can use the Amiga's own internal drive as a double-sided PC drive – an essential but tricky feature that took around 40K of assembler to implement.

In the meantime, you're able to plug any PC 5.25 or 3.5 inch drive straight into the Amiga's external disk drive port and read and write to it immediately after it's been installed. For that matter any old disk drive will do, but KCS is still in the process of writing a disk-formatting routine which should soon be completed. But although you can configure your internal Amiga drive to read and write to PC format, you can't do this from within Amiga mode or vice versa. If you want your Amiga program to read/write PC data files then you'll still need *Dos to Dos* or *CrossDos* to convert the files. As Verhey points out, "There's no reason "to re-invent the wheel."

As soon as you've decided on your disk drive set-up, you move on to determining the PC video mode you wish to emulate. Currently CGA and MDA modes are possible. The configuration for CGA mode, though, allows you to choose from all 4096 colours to make up the four that constitute CGA. Although EGA and VGA

modes are in the planning stage, KCS are quick to point out the problem here will be memory. In a nutshell, the more colours you have on screen the slower the refresh rate. This is the trade-off against direct screen I/O: the PC processor isn't accompanied by its usual PC video chip, so the Amiga is handling all colour and in tests KCS have concluded that 16-colour EGA emulation will slow the 68000 to around 10% of its normal operating speed.

The only way to counter this is by providing extra RAM. Currently it's thought that around 2MBytes will be needed to handle the extra colours at the same speed as in CGA. And in CGA mode the Power PC board is fast. By comparison, *Transformer*, the software-only PC emulator, is a joke. Perhaps an A2000 with a Bridgeboard is almost one too, since PC emulation is painfully slow in a multitasking environment. KCS opted to ditch all notion of providing a board to run in a multitasking environment. If you want to run several programs at once while in PC mode there are several PC utilities to let you do that. It may not be true multitasking but it will suffice. KCS's priority is speed and convenience so they've gone for a simple single-tasking machine.

Video configuration also allows you to alter character size, cursor speed and colour and turn interlacing on and off. This latter feature enables PAL-compatible display output so you can record PC output to video, a capability not available on PCs.

PC mouse users will be pleased to hear they can configure mouse installation to both Microsoft and Mouse Systems standards and specify the number of buttons they wish to be operative. Both Amiga joystick ports can be configured as PC Comm 1 and 2 while serial communications can be set to go all the way up to 9600 baud. Interestingly, printers can be set up with 128K buffers, reset without a full Amiga reset. The delay and repeat speed of the Amiga keyboard can also altered to suit the PC user's needs.

It's No PC Plod!

Once each of the various menu options have been determined a small file is written to enable you to boot directly into PC mode. The resultant file can either be saved as a normal boot file, runnable from Workbench, or as six sectors that are stored in the boot sector of a PC disk. This latter option is ideal since it means that once you've set up your everday configuration you can simply copy the parameters to all your PC program disks – on whatever format – and boot directly into them without even catching sight of the Amiga system acting host to the PC card.

Obviously it would be best to have an MS-Dos partition on your hard disk but this hasn't been implemented yet. That way you could boot up fast into PC mode but as yet there's no hard disk drivers written. A driver for the A590 will be KCS's first upgrade, with others to come as and when the respective drivers are available. The company are also very open to customer feedback leading to new developments.

For those users who don't have a hard drive but want superfast loading of MS-DOS and Amiga programs, KCS are also working on utility that will let you load/dump RAM to floppy and vice versa as one batch file.

Once in MS-DOS, you have 704K at your disposal – enough to run all standard AT/XT software. But because there is no means of adding extra RAM to the Powerboard, PC programs requiring more RAM aren't supported. A *Landmark* benchmark utility revealed the PC emulation to run at a respectable 6.4 MHz, over three-and-a-half times faster than a standard PC XT. The emulation is so complete that all the Amiga function keys can emulate their respective PC functions automatically. As you might expect, then, the key combination controls so beloved of the PC world are also activated so that to all intents and purposes you have a fully-functioning PC at your control. Scrolling is fast and a good deal quicker than a lot of ATs.

Verdict

We have to stress that we were shown a 'work in progress' system that couldn't as yet handle PC graphics. Anything text-based worked fine: our copy of *WordStar* ran perfectly well and behaved admirably. But these guys certainly seem to know what they're doing. To get the emulator working at all via the RAM expansion slot is a technical tour de force in any case, so the rest should be a little more straightforward.

At the price and performance and with the bundle offered it must be a bargain. Then all you have to decide is whether you want a PC. Believe it or not, nearly a million PCs are installed each month, so it would seem you wouldn't be alone in wanting one. Whether they'll get one as cheaply as you can is quite another matter…

PC POWERBOARD ■ Bitcon Devices, 88 Bewick Rd, Gateshead NE8 1RS ■ £299 for the board, RAM-resident Phoenix DOS Help (worth £55), Microsoft's MS-DOS version 4.01 (worth £80), and PC *GWBasic.*

Pictures: Nigel Streeter



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MUSICAL YOUTH

The music program that every Amiga-owning amateur musician has been waiting for has finally arrived. **JASON HOLBORN** looks at MicroIllusions' cut-down *Music-X Junior.*

MicroIllusions' *Music-X* has probably done more to promote the Amiga as a serious musician's tool than any other single item of software. Since the program's release last year, musicians across the world have finally realised the Amiga's obvious potential as a complete music workstation. However, *Music-X* certainly isn't cheap. In terms of what it offers, it's very competitively priced: but for most of us, £225 is still one hell of a lot of dosh to hand over for one piece of software!

After the PC Show last September, MicroIllusions announced that they were to produce a cut-down version of *Music-X*. After many months of waiting, *Music-X Junior* is finally with us. Selling at a few pence under the magic 100 pound notes, could *Music-X Jnr* be the answer to every amateur musician's dream?

Like Father, Like Son?

To all intents and purposes, the majority of *Music-X Jnr* looks and feels identical to the original *Music-X* program. Like its big broher, *Junior* boots into the sequencer page. First impressions are that things look very similar. However, on further inspection it becomes obvious that a few things have been chopped. For starters, the external synchronising options (SMPTE etc) that did so much to promote *Music-X* have been removed – *Junior's* master supports internal and MIDI clocks only.

The only other major change to the sequencer page is the removal of most of the recording options. Recording is now restricted to straight start/stop real-time operation: gone are punch in, loop mode, target sequence muting and the like. It seems a little harsh on the part of MicroIllusions to cut the record function down so much, but then you are saving yourself £125.

Apart from these omissions, the core of the *Music-X* sequencer is still there and as good as ever. With 250 tracks of recording and high resolution absolute and relative timing (192 PPQN), most musicians will still find *Junior's* sequencer page more than adequate for the vast majority of sequencing tasks.

The original *Music-X* program featured not one, but two separate sequence editors: a traditional Event editor and a graphic-based Bar editor. The good news is that the best of the two, the Bar editor, has been kept in, which is sure to earn MicroIllusions a few new friends. In a way, it's a shame that the event editor has been removed, since it allowed precise control over individual MIDI events.





Above: The Sequencer page. Apart from the lack of SMPTE time code support, things look almost identical.

Left: The Filters page has certainly changed.

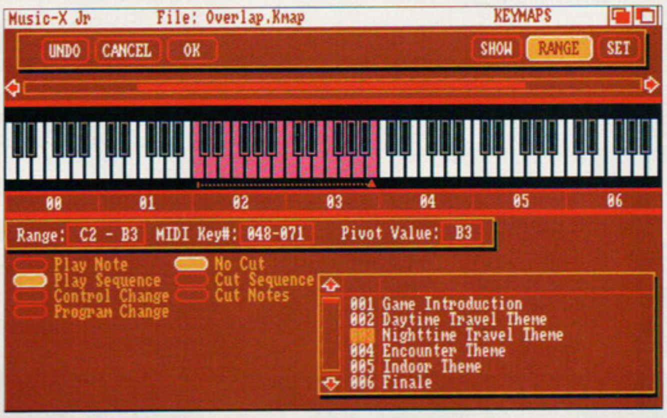
Below: The Keymaps page has been cut down somewhat.

Filtered Options

One of the most highly-acclaimed features of the original *Music-X* was its Filters page, which acted as a software-controlled MIDI patchbay. Unfortunately, Micro-Illusions have stripped *Junior's* Filters page down to a minimum, making it rather less useful. For starters, individual MIDI events can no longer be mapped onto individual MIDI channels. Being able to map program changes onto one channel, note data onto another and system exclusive to another proved to be very useful in the original. *Junior's* patchbay is little more than an extension of the Channeliser function that can be found within the Sequencer page.

Surprisingly, the Keymap editor has survived the chop, but once again, has been stripped down to stop *Music-X* owners from grumbling about the price that they had to pay. *Junior's* keymap editor allows you to use only one keymap at any one time: others can be loaded in, but only one can be held in memory at any time.

The range of events that can be mapped onto keys has also been reduced. Only notes, Play Sequence, Control and Program Change messages can be assigned.



Sample City

Thankfully, the Amiga samples page has remained intact. Up to sixteen samples can be assigned to individual MIDI channels, thereby allowing even the most basic of MIDI set-ups to sound great. Combine *Music-X Jnr* with a sampler such as Master Sound, and you'll never need to invest in a dedicated sound sampler!

Conclusion

Although this review might sound rather negative because it only deals in what's lacking, my overall impressions are far from this. The problem is that we have all become spoilt with the features that the original program provided. If *Junior* had been released before *Music-X*, then no doubt the program would have still been hailed as a breakthrough in Amiga music software, even without the extra options that *Music-X* provides.

Music-X Junior provides everything that the average amateur musician could possibly require. Options such as SMPTE time code aren't really of great use to the average home user, unless he or sheb just happens to have picked up a cheap 24-track recorder at the local car boot sale!

All in all, for the intended audience *Music-X Junior* still manages to provide the most complete MIDI studio for under £100.

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PD UPDATE

The Public Domain is packed with helpful utilities and stunning demos. **RICHARD MONTEIRO** checks out the best of what's on offer for little more than the price of a disk.

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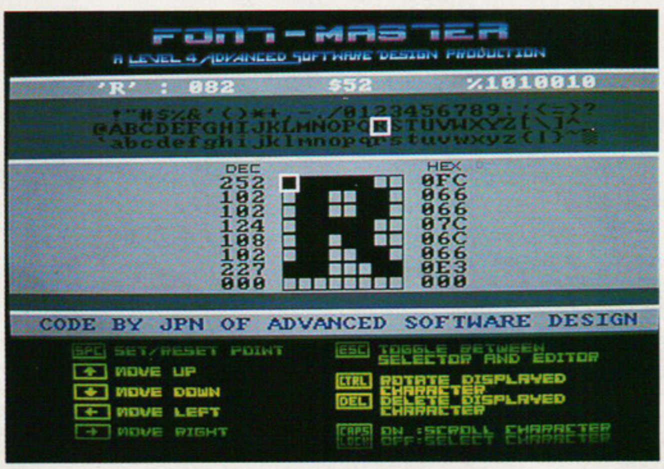


Here's looking at you, *FastMon*.

SQUEEZER
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Right: Points are set or removed in *Fontmaster's* eight-by-eight character matrix simply by pressing the space bar.



JAZZBENCH
Nova

Yes, in a previous edition of PD Update there has been mention of this excellent Workbench replacement. Unfortunately too little space was devoted to this truly remarkable program.

Nova have, very sensibly, now put David Navas' creation onto a single bootable disk. There's no need to fiddle around with countless CLI commands to get a bootable version of *Jazzbench*. If you've tried creating such a disk from the numerous files that make up *Jazzbench*, you will know what a performance it is. With this version, you simply insert and go.



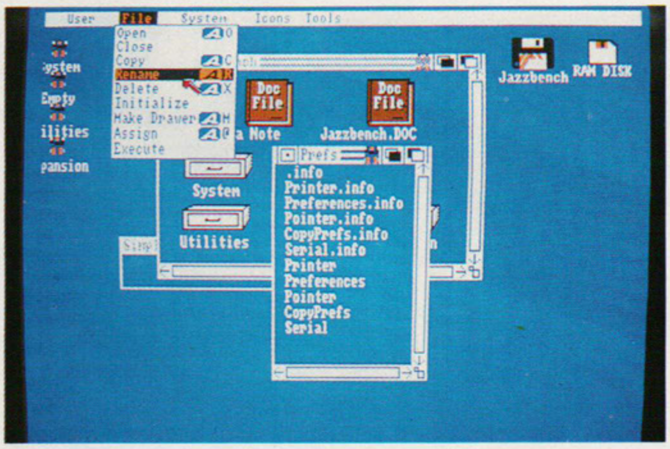
Above: All the icons down the left of the screen are miniature representations of windows while the ones down the right show you all current devices.

Okay, so there doesn't appear to be much that's changed when the *Jazzbench* main screen flicks into view. Indeed, at a cosmetic level very little has been altered. But just try opening a window...

The busy cloud icon never appears when you perform an operation because *Jazzbench* is fully multitasking. No matter what the machine is doing, you can quite happily ask it to do something else at the same time.

Windows have an extra icon attached to them in the top right corner of their border. Clicking on the new icon reduces the window to a small icon which sits on the *Jazzbench* screen. Clicking on the small icon representation will return the window to its proper size. The operation works brilliantly and it's very fast.

All the options in the menu bar have been changed. While you can still perform the functions offered by Workbench, numerous others have been added to make the system much more powerful. For instance, there's a User menu bar heading which allows you to have accessories like those the Atari ST and Apple Macintosh provide. Among other things it's possible to



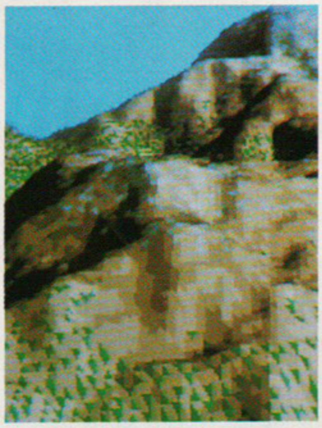
Hidden files can have default icons assigned to them with *Jazzbench,* so you can see everything that lies on a disk. Alternatively, you can view files in text format.

use a clipboard, edit libraries, show all devices, show files with no icons, show files in text format rather than icon format, arrange icons in alphabetical order, cycle screen colours, edit text, show IFF images, edit IFF images, play IFF sounds and edit IFF sounds. And all these powerful procedures come straight from *Jazzbench.*

There's so much to *Jazzbench* that it would be easy to fill all of PD Update with details about it. If you feel you've outgrown Workbench, then you should try *Jazzbench* for size.

SCENERY
TBAG 26

This program generates realistic fractal images of mountains and landscapes. *Scenery* is a doddle to use and yet produces such good results – just take a look at the image here.



With *Scenery* you can spend many a happy hour generating realistic fractal landscapes.

CLIXECUTE
TBAG 31

It's possible to run a specified program at boot-up by using this handy utility. You can force *Clixecute* to run a pre-selected file simply by holding down the left mouse button when you insert a disk into the drive. Simple!

VGAD
FAUG 83

Creating gadgets quickly is virtually impossible. *Vgad* reckons differently. The program takes two IFF images – one with all the gadgets in their normal state and one with them in their highlighted state – and converts then into C source with all the necessary control and data structures. *Vgad* really does make gadget-creating that easy.

VIEWBOOT
FAUG 81

It's hard for any virus-killing program to keep up-to-date as so many new virus strains appear all the time. What might be the ultimate virus killer one month may well be obsolete the next. *ViewBoot* doesn't pretend to be a virus killer in the general sense, although it will spot many viruses and warn you of dodgy cases.

Instead of attempting the full virus-buster routine, *ViewBoot* lets you inspect all the likely areas that might contain something sinister. For instance, you can view the boot block and memory area which are where viruses tend to hang out. It's then up to you to decide what to do if you spot something irregular.

THE HOLY GRAIL
17Bit Disk 556

Wow! This is good enough to be a commercial product. *The Holy Grail* is a massive text-only adventure with an incredibly powerful parser, hundreds of locations and reams of descriptive text.

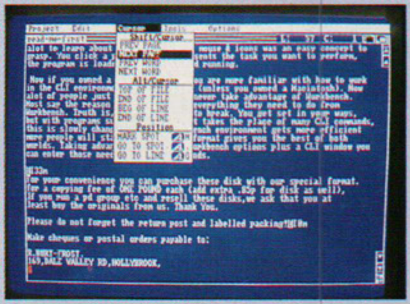
Text-only adventures are not common in the commercial sector, and might appear to have had their day now that 16-bit machines are blessed with so much memory and such fantastic graphic capabilities, Jim MacBrayne demonstrates that there's still no beating an epic text-only adventure.

TBAG DISK OF THE MONTH 34
Ray Burt-Frost

Crammed onto the latest disk from the Tampa Bay Amiga Group is a collection of fantastic utilities. Here are details of some of the best from what, as usual, is a rather fine crop:

QED

Revision 0.19 of Darren Greenwald's great text editor, *QED*, can be found on the new TBAG disk. A bug fix means line edits are now recognised properly. *QED*, if you're new to it, is a general-purpose file editor which allows unlimited editing windows of unlimited length to appear on screen. In other words, the number of files you can have opened is restricted only by memory. Similarly, maximum file size is determined by storage space. Along with a very comprehensive range of editing features, *QED* is blindingly fast compared to other text editors.



***QED* uses a neat little something called FastText, which speeds up the rendering of fonts of any height, and means they can be anything from four to 16 pixels wide.**

XIV

A simple IFF picture slideshow utility which can display a series of IFF ILBM images. Each picture is displayed for 10 seconds or until a mouse button is pressed. Simple, but effective.

ATRTERM

This is a comms terminal program which supports X, Y and ZMODEM, up and downloading, ASCII file transmission and *SkyPix*. With *SkyPix* it's possible to send Amiga images, fonts and brushes over the phone. Music transmission will soon be offered. Numerous Amiga BBS offer *SkyPix*; *ATRTerm* comes with a large list of phone numbers of bulletin boards featuring the service.

XIP

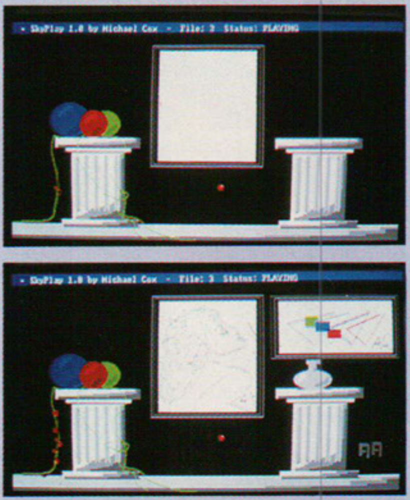
Another IFF slideshow utility. But unlike *XIV*, *XIP* will fade between one image and another. Over 1000 different slide styles are available. All IFF pictures – including HAM, halfbrite and overscan – can be viewed by *XIP*.

DISKOPTI

The purpose of this program is to copy an entire disk in a way that enables files on the copied disk to be read back faster. *DiskOpti* does this by rearranging file data blocks so they lie in sequence. As a disk is used, files become more and more fragmented. This nifty utility will ensure that all data blocks belonging to a file are contiguous (touching, adjoining, near). Two disk drives are required.

SKYPLAY

SkyPix is a graphics protocol that allows you to receive and send Amiga images over the phone line via a modem. *SkyPlay* simply allows you to view images in *SkyPix* format.



***SkyPix* are unlike ordinary IFF images in that every line, circle and so on is treated as an object. Images will appear on screen as if being drawn in real time.**

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SEN72 ROTATINGWOMEN
SEN88 CAR DEMO★
SEN108 ZEUS BUST★
SEN118 DRAGONS LAIR★
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SEN36 PAN DEMO
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DEMOS CORNER

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INTROS DISK 26

17Bit Disk 564

Yet another in 17Bit's selection of mini demos. and intros. The latest disk features work by Slipstream, Street Tuff, Escape, Dtect, Arcadia, THR and Legend. Most impressive is Dtect's offering which does away with the usual, and now very cliched, scrolling star background and replaces it with a superb moving spiral of stars – the effect achieved is both excellent and original.



Dtack's original spiral starfield can be seen on Intros Disk 26.

THE AMIGA CHART 5

17Bit Disk 557

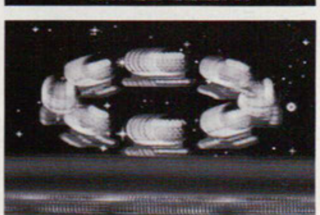
Two incredible mixes, Touch Me by the 49ers and Before the War (the Ben Liebrand remix), are all that make up the this music disk. You can just about get away with hearing the tunes on a 512K machine, but you miss out on a pretty picture. Still, it's the music that's most important on this disk.

HACK PACK III

Nova

Five of the latest and greatest demos to appear on the Amiga can be found on Hack Pack III. Strider, Hurricane, Pyschoball, Pan and Xenomorphs all contribute.







There are some strange sprites infesting Xenomorphs' Hack Pack III demo.

STARFLIGHT

Ray Burt-Frost disk 454

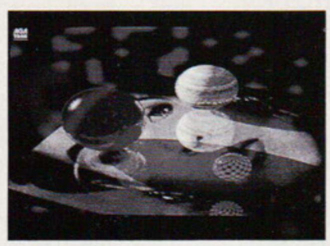
After all the fuss made when *SEUCK* (*Shoot-Em-Up Construction Kit)* was released, you would expect the PD to be littered with *SEUCK* demos and games. Not so. What has happened? Who knows. But Dominic Beadle is one chap who's got to grips with Palace's game creator and devised a... yep, you guessed, a shoot-em-up. The range of objects that attacks you is interesting, but there's no explanation why balls, eyes, bricks, houses and an assortment of alien craft should club together to clobber you.

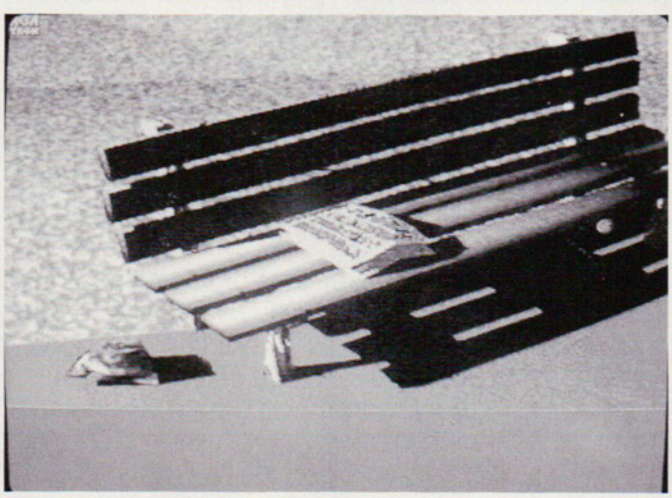
AGATRON SLIDESHOW 3

Nova

A collection of some of the best ray-traced HAM images are to be found on this disk. You'll find fascinating images ranging from reflective spheres to the rings of Saturn. Tobias Richter of West Germany is the man responsible for the pictures.







SUPPLIERS

The following companies are responsible for the distribution of Amiga public domain software in this country. For their full address check the advertisements in this issue of *Amiga Format*, or give them a ring on the numbers listed below.

17 Bit Software: 0924 366982, Softville PD: 0705 266509, Amiga PD Library: 0742 588429, Purple PD: 0279 757692, Ray Burt-Frost: 0703 785680, Blitsoft PD: no phone number, Seniac PD: 0424 753070: Deeper Domain: 01 204 3954, Crazy Joe's: 0709 829286, Nova: 0295 262029, WCA PD: 0792 772745, George Thomson: 0770 82234.

NEWTEK DEMO REEL 3

17Bit Disks 559/560

Remember the wonderful Newtek demo with the Art of Noise's Paromania track and the monitors showing a woman screeching New-New-Newtek? Well, Newtek have done it again. And you thought the last one was good. You ain't seen nothing...



Bigger and better than before: Newtek's new demo.





LINK MEGADEMO

Nova

Strictly for demo collectors, this one. Lots of big scrolling messages, speeding sprites and sampled music tracks. Some clever blitter tricks are employed to make certain parts of the screen shimmer, squeeze and stretch. The fourth demo on the disk shows these clever tricks off to particularly good effect.





Cartoon-quality graphics are to be found in the third demo on Link's Megademo disk.

PDOM PD AMIGA

APPLICATION DISKS

● **FFISH254** - UEdit V2.5b the excellent word processor.
● **FFISH 176** - AnalytiCalc V23.2a of the large and powerful spreadsheet. Requires 1Mb RAM and 2 drives.
● **FFISH 143** - RIM V5.0 is a Relational Information Manager, a fully relational DBMS that is suitable for very large databases using B-Tree data storage. Versions of RIM run on a variety of micro systems both small and large, and produce compatible databases. Includes a built in HELP database and a programming language.
● **AMP1:** Home Business Pack, RIM the relational database and HyperBase database. UEdit the brilliant word processor, spell checkers, VisiCalc and VC spreadsheets.A 3 disk pack for only £7.50!

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● **FFISH253** - Elements an interactive display of the periodic table.
● **FFISH258** - BACKUP V2.04 allows you to backup anything, anywhere!
● **PDOM93** - ARP V1.3 the Amiga DOS Replacement Project.
● **PDOM 62** - The Public Dominator Anti Virus Disk: Virus X V4.0, VCheck V1.2 (for memory), VCheck V1.9 (for disk drives), Zero Virus V1.3 the fully integrated virus detector and killer. Also Boot Block Champion the utility.
● **PDOM 59** - Ameteur Radio Disk: StarTerm V3.0, P81 and P1027 2 packet terminal programs, TA Term V5.0, a HAM Database for the Amiga Amateur Radio Group, Morse Code, Satellite Tracking and loads of HAMutilities. A real must for the serious HAM user.
● **FFISH 243** - NoClick V3.5 stops the disk drive clicking if there is no disk in the drive. PassWord V1.21p you specify the password for your system security. Pcopy V2.0 the excellent disk copier. SimGen adds a 2 or 4 colour picture to your WB screen.
● **FFISH 213** - Bitplanes the 8 colour icon user and 300 8 colour program icons!
● **FFISH 188** - Boot Intro V1.0 displays a scrolling and a still message of your choice at boot up. DiffDir V1.0 compares 2 directories. FracGen V1.23 fractal generator a real fully featured fractal program.
● **FFISH 168 and FFISH 169** - The Matt Dillion disk special includes loads of utilities and source: Config V1.0, Clock V1.0, DME V1.31, DMouse V1.1, Backup V2.01, SUPLIB, LIBREF, DRES V1.0, DASM V2.11, FILES V1.2, SHELL V2.1, FINDIT V1.0, LIBS V1.0, SCAT V1.0, ADDCR V1.0, REMCR V1.0 and CMP V1.0.You will need both disks @ £3.00 each.
● **FAUG 41** - Rain Bench, Amiga Arc V0.2 compatible with ARC V5.0.
● **AMICUS 22** - Printer Driver Generator V2.3, Show Print II.3 IFF screen dump.
● **FFISH 158** - DiskX is a sector based disk editor, MemBoardTest V2.4, MSDOS V0.1 lists files written in standard MSDOS or ST format, then copies them to RAM then rewrites to disk in AmigaDOS format. PCBTool V2.6 is an early version of PC Board layout program that does not support printers, ScreenX is a small clock/memory counter, TaskX V2.0 is a 'realtime' task editor..
● **FFISH 157** - XIcon V2.01 allows you to call up scripts containing CLI commands from an icon.60 or 80 toggles 60/80 column text, BootBack is a disk boot block save/rewrite and copy program, ECPM is a CP/M emulator.
● **FFISH 145** - Dmouse V1.06 is a versatile program that includes screen/mouse blanker, auto window activator, mouse accelerator, popcli, pop window to front, push to back etc.
● **FFISH 131** - DFC is a disk copier that multi-tasks, Hyperbase V1.6 is a database system, Mackie is a PopCLI replacement, Micro Emacs VMg1b the text editor.
● **FFISH 130** - DirMaster V1.1 is a disk cataloguer, Hp V1.0 a nice RPN calculator which supports calculations with binary, decimal, hex float & complex numbers, Mach V1.6a the mouse accelerator.
● **FFISH 129** - DosKwik a pair of progs which allow you to save files or groups of files to one or more disks for quick loading, MRBackup V2.0 and V2.1 a hard disk back up utility.
● **FFISH 69** - Spool V1.2 : a queue manage, printer driver and SPOOL requester and Wc a file word counter, Asm68K V1.0.3 fully featured macro Assembler, Blitlab a blitter exploring program in C Conman V0.9 a sort of CLI shell, Dk decays the screen bit by bit, Frags displays memory fragmentation by listing the size of free memory blocks, Icontype changes the icon type, MonProc monitors processes for packet activity, MouseClock turns mouse pointer into a digital clock, Spew generates News of The World type headlines, Sb a sytem browser.
● **FFISH 65** - Sunmouse V1.0 automatically clicks in windows when the mouse is moved over them, RunBack starts programs from CLI allowing CLI window to close.
● **FFISH 55** - ASDG-rrd a RAM disk that survives reset, BigView displays any size IFF picture, EGraph creates graphs from X,Y pair text files, Hyperbase V1.5 a neat database management system, MemClear Zero fills free memory, NewZap V3.0 disk sector editor, Rainbow makes Workbench background a rainbow, 2 Smusplayers to play SMUS IFF music files, View a tiny IFF picture viewer, WB to JX-80 screen dump.
● **FFISH 244** - BBChampion V3.1 the Boot Block Champion load, save and analyze boot blocks. BootIntro V1.2 you specify The headline text of up to 44 characters and the scrolling text of upto 300. FMC V1.2 is a no fast memory program. SizeChecker V1.0 uses a list of file sizes to check unexpected file changes.TextDisplay V1.52 the great text display that handles all screen formats. XColour V1.2 the screencolour setter.
● **FAUG 67** - Disk X V2.0 the sector editor, Hand Shake V1.06b a VT100 terminal emulator, Pack It a whole disk compressor.
● **FAUG 62** - Access! V2.6 very powerful telecommunications package. Hide II allows you to turn off and on your RAM expansion. Cron - runs a table of background tasks, Add Icon V1.0 adds icons to files without icons, IFF Mirrors is an ILBM slide show with X and Y mirroring, FFormat V1.a fast formattor.
● **FAUG 50** - Dir Util V VI the disk manager, Roll Back V1.0 rolls back text that has rolled off the top of the screen, Short Cut allows you to define text to a single key stroke, thus CLI commands are simpler to type.
● **FAUG 47** - FunKey assign any text string to a function key.
● **PAN 25A** - Disk Wipe very quick disk contents wiper, SELECT allows you to select in your Startup-Sequence from a number ofscripts, Virus Check V1.1.
● **PAN 19D** - ZOO V1.42a a very good file compressor, Con Man V0.99b provides line editing and command line histories, Distinguish type of files with File Type, Pipe Handler, Pop CLI V3.0.
● **PAN 17B** - AmiGazer 1573 stars to view any time, date or lattitude CLI only, DateBook the diary, bind any text string to a function key, use CLI froma menu, a disk cataloguer Lightning Logger V1.2.
● **APDC 18** - Floppy Disk Utils: Quick Copy V1.0, Disk Mapper, Disk Salvage, Viruscheck, System Utils: Blitz V1.0 text editor, TimeSet, ACalc calculatorAmiga Monitor V1.1, MeM Grab fast memory grabber, DirectoryMaster V1.1
● **APDC 15** - Icon utilities: full of icon files and creators. Some animated! Brilliant disk for icon manipulation.
● **AMICUS 24** - Sectorama - disk sector utility, Iconize V1.0 reduce a full screen picto an icon, BMon system browser, Virus Check v2.21 checks disk & memory, Boing Machine.

DEMO DISKS

● **PDOM89** - AMOS the Amiga Games Creator Demo. A demo of the popular Atari ST games creator now available for the Amiga.
● **PDOM91 and PDOM 92** - Ghostbusters II demo by Hellbound, requires 2 disk drives and 1MB RAM! Great digitised pics and sound from the movie Ghostbusters II. 2 disks @ £3.00 a disk.



● **PDOM 86** - The Memory Expansions Systems demo No1. Excellent graphics! Requires 1MB RAM.
● **PDOM 87** - The Memory Expansions Systems demo No2. Amazing graphics! Requires 1MB RAM.
● **PDOM 88** - The Ghostbusters and Hungry Horse demo. Requires 1MB RAM.
● **PDOM 89** - AMOS demo.Product demo from Mandarin of their games creator package for the Amiga.
● **PDOM 82** - Batman Remix demo. Sampled sounds of Prince's BATMAN.
● **PDOM 83** - Space ACE Demo an excellent demo of the game with fabulous animation and incredible sampled sounds!
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● **PDOM 84 and PDOM 85** - R.A.F. - Royal Amiga Force Mega Demo, astounding! 2 disks but you only need 1 drive. Requires PDOM85.
● **FFISH 196** - Stunning digitised HAM pictures. Excellent! The quality is astounding.
● **PDOM 01** - The Walker Demo I is a mega animation demo that requires 1Mb RAM.
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● **PDOM 06** - The Mahoney and Haktus sounds of the knome music disk II, great graphics and mega sounds. With abouncy mouse pointer and things flying everywhere. A really good demo with loads going on.
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● **PDOM 69** - High Class UK compilation: Triangle, New BS1, Zoom First, W.O.W., RAF First, Spreadpoint, Subway/ TNTand others.
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● **PDOM90** - Tennis game by C Dreke, excellent tennis action game, fully working.
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● **FFISH 259** - Escape From Jovi a fast action mega graphics games with stereo sound, hi res scrolling etc.
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LANGUAGE DISKS

● **FFISH 171** - Sobozon C a port of the Atari ST version of this full K&R C compiler, assembler and linker. It has been tested on an A2000 and appears to work well. Not for the beginner due to lack of disk info.
● **FFISH 193** - Zc V1.01 modified version of the Sobozon c compiler from disk FFish 171. It now generates codecompatible with A68k assembler and has a front end to allow easier useage.
● **FFISH 140** - Stoney Brook PROLOG v2.3.2. This disk contains the executables & libraries. In addition to providing a compiler SB-Prolog also offers advanced features such as dynamic loading, mixing of compiled and interpreted code, macros, extension tables & a debugging facility. The Source for SB prolog is contained on FFISH 141, but this is not needed to operate FFISH 140.SB PROLOG requires 1Mb of RAM.
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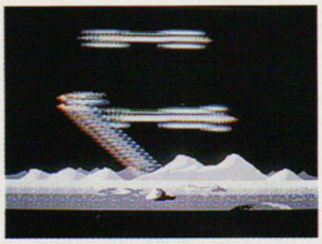
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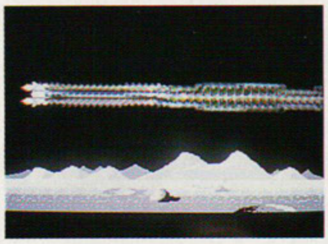
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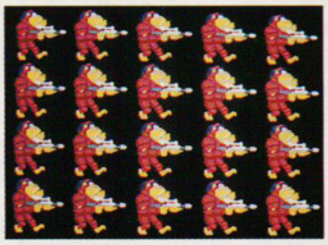
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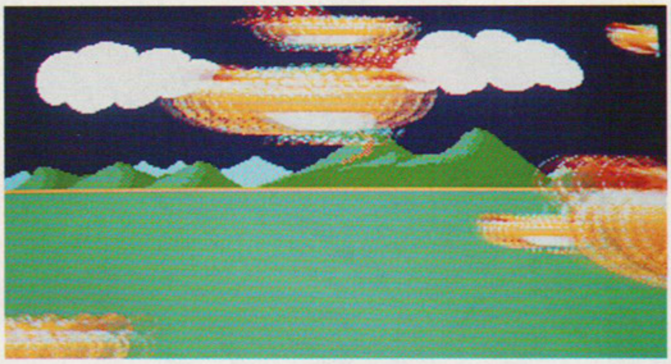


AMOS PREVIEW

AMOS still isn't here, and the wait is unbearable. To ease the pain, **JASON HOLBORN** provides relief with a look at the latest version of Mandarin's long-awaited games-writing system.

Mandarin's *AMOS,* the Amiga version of their hugely-successful Atari ST *STOS* games writing utility, is rapidly becoming one of the most eagerly-awaited Amiga products of all time. Even Version 1.4 of the operating system has suddenly taken a back seat to what is set to be the most important games-writing utility ever released.

Here at *Amiga Format,* we've been swamped with enquires from readers trying to get their hands on a product that promises to bring the art of games programming to the masses. Does *AMOS* actually exist, or is it just a ploy to make Amiga owners' lives a misery? Of course not: and just to prove it, here's a quick preview to whet your appetites.



What Is AMOS?

First and foremost, *AMOS* is a complete development system geared towards the quick and easy production of games software. However, as users of the original *STOS* proved, *AMOS* will be capable of much more than this. Although *STOS* was originally badged as a game-creation system, ST owners have used it to produce applications as diverse as dental databases to lightning research. Mandarin themselves see *AMOS* as being of particular use for the the likes of education software and training systems.

The heart of *AMOS* is a powerful BASIC-like programming language called (not surprisingly) AMOS BASIC. Since BASIC has earned itself a bad reputation where games programming is concerned, it comes as no surprise to learn that many are dubious about *AMOS*'s potential.

However, the good news is that you can forget all the preconceptions developed after previous contact: AMOS BASIC is a different beast altogether. Not only is it fast, but it includes all the constructs that you'd expect to find in a modern programming language.

Although *AMOS* provides a powerful implementation of BASIC, the real power shines through when you start to access the features that only the Amiga can provide. Read on for an overview of what *AMOS* has to offer.

AMOS OVERVIEW

I know what you're saying: 'Go on, impress me.' Just take a look through the next few paragraphs and you'll be more than impressed by what AMOS has to offer.

Screens – Multiple screens from BASIC are pretty old hat these days, but *AMOS* takes them a step further. Because *AMOS*'s screen handling is hardware based, multiple screens can be displayed simultaneously with their own resolution, size, colour palette etc. Even HAM and Extra Half Brite screens (64 colours) can be implemented with ease.

AMOS includes direct support for IFF files, therefore allowing any standard IFF picture to be pulled into a screen with a single command. Once your screen is defined, use *AMOS*'s powerful scrolling facilities to push the Amiga hardware further than any BASIC has ever dared to take it.

If this isn't enough, *AMOS* includes complete support for blitter operations and even the copper. Those rather overused copper colour-bars can be added to any program with the *AMOS* Rainbow command. Mandarin originally intended to include a copper list editor, but the growth of *AMOS* has made it redundant. If you must write your own copper lists, *AMOS* will accept any copper list in hardware format (two 16-bit words per instruction).

Sprites – As Dave Jones pointed out last month, the secret to any game lies in the quality of the on-screen sprites. *AMOS* allows you to define and display upto 400 sprites simultaneously. If you find hardware sprites too restricting, then *AMOS*'s powerful Blitter OBject (BOBs) commands are the key. *AMOS* allows you to use as many BOBs as memory will allow. Not only are *AMOS* BOBs redrawn at a blistering rate, but *AMOS* even handles the complicated business of double-buffering for you (which is something that assembler programmers have to do themselves!)

To make the task of sprite creation simpler, *AMOS* even includes a complete sprite editor tool that allows you to build up sprites quickly and easily. If you don't fancy yourself much as a sprite designer, then you can even 'borrow' sprites from commercial games using *AMOS*'s sprite grabber utility (naughty, but oh so nice!)

Animation – Producing complex animations is simple with AMOS's powerful Animation Language, AMAL. Using the included AMAL editor, complex animations can be built up just by clicking points to make up a movement path using the mouse.

Sound & Music – Blow away those who play your game with startling digitised sound effects. Just load in any standard Amiga sound sample and *AMOS* will play it through any specified sound channel.

Music tracks can be written using *AMOS*'s included music editor which is a *Sound Tracker*-like program that offers up to 256 sampled instruments in memory at once, multiple pattern and song memories and much more besides. If the *AMOS* editor isn't to your liking, then *AMOS* will also allow you to pull in scores created using lesser packages such as Aegis' *Sonix, Sound Tracker* and Andreas Tadix' excellent *Game Music Creator* (*GMC*). Even if you have no musical talent, the PD libraries are filled with many pre-written tunes that could be used in games.

AMOS Extensions – Even if you should reach the limits of *AMOS* (which is unlikely for most of us), the system is designed in such a way that extra commands can be added simply by installing additional modules. Already Mandarin are hard at work on a 3D extension which will provide *AMOS* programmers with the ability to produce *StarGlider*-type effects with genuine ease.

Extras – The *AMOS* package comes complete with a comprehensive manual, extra tools such as a map editor (called TAME – Total AMOS Map Editor) and a number of example games. The included games are *Frog Jump* (a *Fun School 2* game), *Magic Forest* (platform and ladders-type affair) and an *Asteroids* clone.

Conclusion

All too often a product is hyped before its release and fails to deliver even a fraction of what was promised. Thankfully this isn't likely to be the case with *AMOS*. From the various demos and pre-production copies we have seen, *AMOS* looks set to be the most important games-writing utility ever. If you want to harness the power of your Amiga, but lack the know-how, then *AMOS* is for you. *AMOS* looks set to be the realisation of every BASIC programmer's dream and to provide the first real opportunity for you to unleash the game ideas that have been waiting to burst out all these years. ■



The heart of the beast: AMOS Basic, a powerful language.

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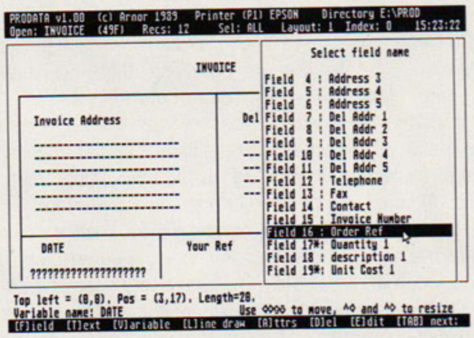
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NEWTEK-NOLOGY



JASON HOLBORN plays with the latest release of NewTek's highly acclaimed Amiga video digitiser, Digi-View.

In the beginning there was the Amiga. A machine with a lovely specification, but nothing to really show off what all that custom hardware was capable of. Then along came Tim Jenison of Kansas-based NewTek with an ingenious little device called Digi-View. Simply by plugging a mono video camera into this matchbox-sized widget, images from the real world could be displayed on the monitor screen of your Amiga – in up to 4096 colours.

When Digi-View was finally released to an unsuspecting public, the sound of jaws dropping could be heard for miles. Even the original Los Gatos-based developers of the Amiga couldn't quite believe the feats that NewTek had achieved with the machine that they had designed!

Since those early days, both NewTek and Digi-View have gone from strength to strength. Indeed the company's activities have earnt them almost cult status amongst Amiga owners in both the States and in Europe. After over four years on the market, Digi-View is now recognised as the most successful Amiga peripheral of all time. Units have been sold to users all around the globe including countries such as the Soviet Union and Japan. Could a Digitiser that is generally seen as the market leader get any better? NewTek certainly think so.

Hardware Corner

Digi-View Version 4 is a software-based upgrade, rather than a full-blown overhaul of both hardware and software. Although Digi-View 4 can be bought as a complete package consisting of all the neccessary items, existing Digi-View users can upgrade by just purchasing the program disk at a minimal cost without having to fork out for a new digitiser unit.

For those of you who haven't been fortunate enough to play around with Digi-View, the unit consists of a small black box (cue for a song?) that plugs into the parallel port of the Amiga 500 and 2000 (A1000 users will have to buy an adaptor). Poking out of one end of the digitiser is the parallel port connector and from the other a single phono connector for feeding in the video signal. Unlike many other units, Digi-View doesn't have any extra knobs or sliders for altering the brightness and constrast of the input signal: all this tweaking can be controlled from within the software.

Recommended input to Digi-View takes the form of a monochrome composite video signal from a mono video camera such as those produced by Hitachi and Panasonic. Although a colour signal can be used, the results are far less impressive. If you're not the owner of a video camera, but wish to use Digi-View in conjunction with a video recorder, the video must be paused every time you wish to digitise an image. However, for best results a mono video camera is most definitely recommended. (We used a Hitachi MV-720K mono camera).

As mentioned previously, Digi-View does not operate in 'real time'. According to NewTek, the reason for not converting to real-time (which they could quite easily have done) is because Digi-View uses a more accurate successive-approximation type converter in conjunction with a low-noise sample-and-hold amplifier. Although this system is considerably slower than the 4-bit flash converters used by most of the competition, it is of a higher quality and allows Digi-View to produce sharper images and to provide increased control over the attributes of the final picture.

New Screen Modes

Digi-View 4's main claim to fame is NewTek's new 'Dynamic' display system. This new system provides two new digitising methods: Dynamic HAM and most exiting of all, Dynamic HiRes.

Dynamic HiRes provides something that has never been seen before – 4096 colours onscreen at the same time in high resolution. This immense feat is achieved by using the Amiga's copper co-processor chip to change the values contained with the Amiga hardware colour registers on every scan line. While only sixteen colours can be displayed on a single line (which is the limit for high resolution displays), the overall effect is breathtaking: easily the best images ever seen on an Amiga screen. If you don't believe me, just take a look at some of the pictures accompanying this review and I'm sure your doubts will soon disappear!

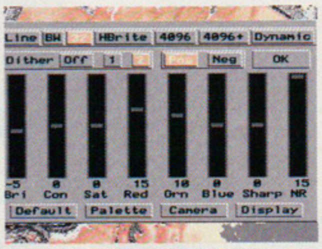
Dynamic HAM is very similar to Dynamic HiRes, and allows the almost complete elimination of many of the problems which are usually associated with Hold and Modify displays.

Grabbing a Dynamic image is a slow process that can take up to 10 minutes before anything resembling the image you require is actually produced. Don't be surprised if your supply of coffee starts to get used up rapidly!

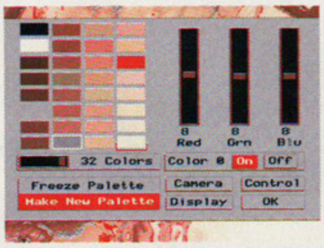
Unfortunately for 512K Amiga owners, all the extra goodies that



***Digi-Paint* in action. Buy Digi-View 4 and get this wondrous paint package free of charge!**



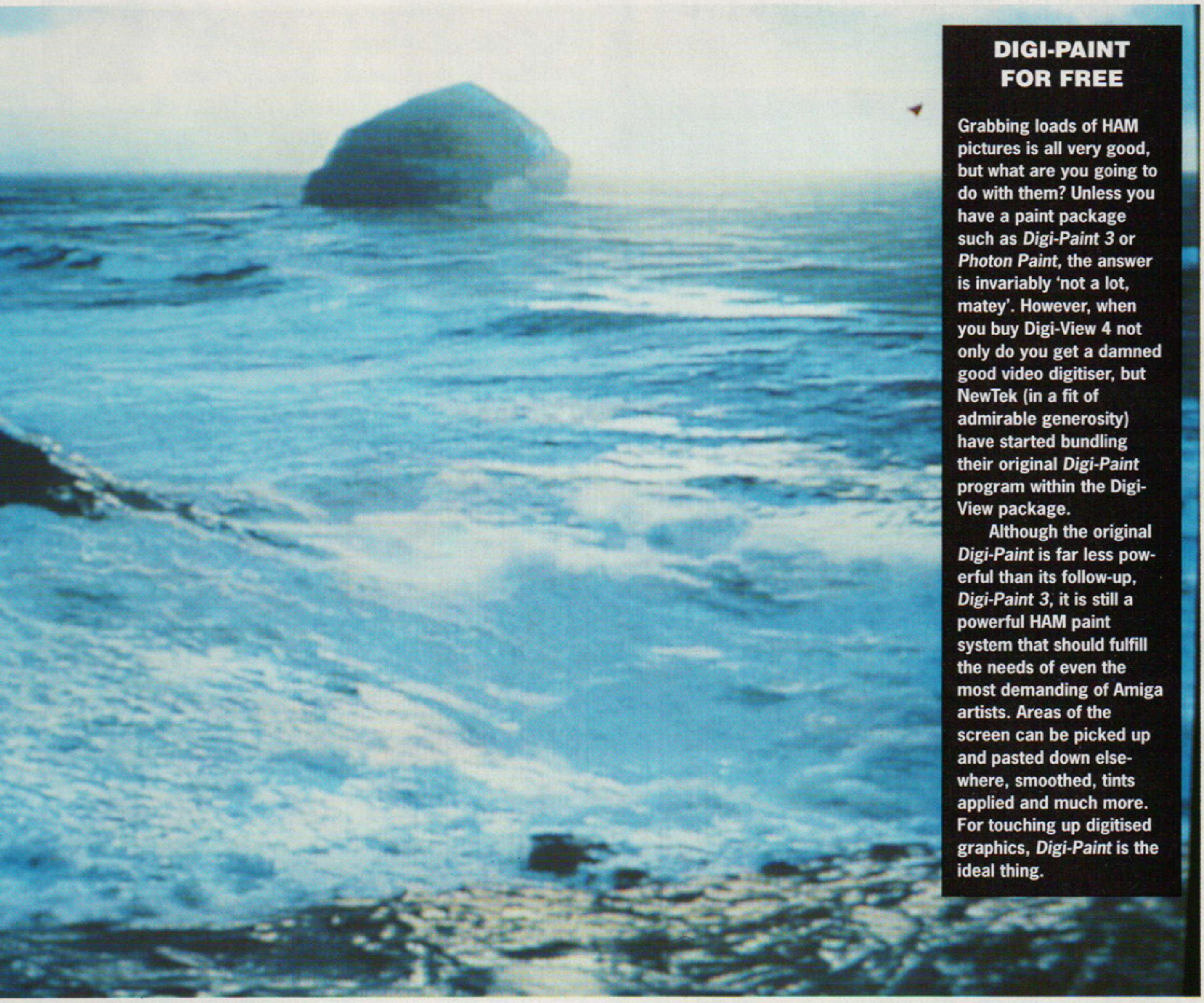
The Digi-View control menu is used to alter the type of image to be grabbed.



Altering the colour palette after the image is built is simple using the software control.



Digi-View supports all screen resolutions, including full over-scan – no other digitiser does.



DIGI-PAINT FOR FREE

Grabbing loads of HAM pictures is all very good, but what are you going to do with them? Unless you have a paint package such as *Digi-Paint 3* or *Photon Paint*, the answer is invariably 'not a lot, matey'. However, when you buy Digi-View 4 not only do you get a damned good video digitiser, but NewTek (in a fit of admirable generosity) have started bundling their original *Digi-Paint* program within the Digi-View package.

Although the original *Digi-Paint* is far less powerful than its follow-up, *Digi-Paint 3*, it is still a powerful HAM paint system that should fulfill the needs of even the most demanding of Amiga artists. Areas of the screen can be picked up and pasted down elsewhere, smoothed, tints applied and much more. For touching up digitised graphics, *Digi-Paint* is the ideal thing.

Digi-View offers are unavailable unless you've got at least a megabyte of RAM. Even then, at least two megabytes are needed if you wish to grab images in Dynamic HiRes mode.

Grabbing Facts

Because Digi-View is not a true colour digitiser such as Marcam's Frame Grabber and JCL's Super-Pic, both of which grab the full range of colour tones in one 'pass', colour images are grabbed using the now familar system of colour filters. For a colour image to be digitised, Digi-View must scan the source image three times using red, green and blue filters (which are provided). Once all three 'separations' are grabbed, Digi-View then combines these into the resulting image.

Because Digi-View stores the image internally in a much higher resolution than the Amiga can display, attributes of the image can be quickly altered without having to re-digitise your image from scratch. To further enhance any grabbed image, the Digi-View software includes a whole host of image processing tools to maximise the quality of grabs.

Conclusion

Getting the very best from Digi-View 4 is not a cheap affair. At the very least you'll need a mono video camera and an Amiga with two megabytes of RAM if you wish to use all the features that Digi-View 4 has to offer. One-megabyte Amiga owners will probably just get by, but even then you can wave goodbye to any hopes of using Dynamic-HiRes. Digi-View is probably not the best choice if you own an unexpanded A500 with just a video recorder as an input source: Rombo's Vidi Amiga is more immediately usable.

This situation is an indication of how developers can be held back by the lack of memory available on a basic Amiga. If developers stuck to producing software to run on a standard A500, new developments such as NewTek's Dynamic screen modes would be practically impossible to implement. As a result, the quality and power of Amiga products would never advance.

Digi-View may be slow, but as the saying goes 'the best things come to those who wait', and this is certainly true of the images obtainable from Digi-View 4. The combination of complete support for all Amiga screen modes, powerful support software (and a free copy of *Digi-Paint!*), makes Digi-View 4 even better value for money than the previous version was already. Highly recommended for its high-quality output.



The sample pictures included with Digi-View make a fine demonstration of Dynamic HiRes.



The subtlety of the 4096 colours available gives an almost phot-realistic quality to these grabs.



Flesh tones and natural subjects from the real world can often show up badly: not now!

Digi-View Gold 4
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WHAT IFF?

MARK SMIDDY reveals the inner secrets of the Interchange File Format – the key to Amiga graphics standardisation.

When the Amiga was first introduced it took the world by storm. For the first time an affordable computer had graphics that average users could hardly dare to dream about.

Yet this could have created a serious problem – with such a wealth of screen formats, it would be impossible for art packages to 'talk' to each other (exchange data) without some form of standard. The problem already existed on the PC. Users would have to use conversion software to update their images when they wanted to use another package, or simply view an alien file – always assuming such software was available.

This is totally unacceptable – and Amiga knew it – so they teamed up with Electronic Arts and developed the Interchange File Format (IFF).

As things have developed in the five years since its introduction, the IFF covers more than just pictures – it has addressed every possible common file structure from animated graphics to sampled sound and music. An IFF file can conceivably contain any mixture of sound, graphics, animation and text, which is what makes the standard so powerful and so outwardly complex.

For the purposes of simplicity this introduction to IFF will cover the most used area, graphics. It must be said, this article assumes a certain amount of knowledge of Amiga programming; beginners are directed to the panels giving brief explanations of some of the terminology used.

How IFF Works

IFF is essentially a very simple standard. The idea was to develop a standard file format which was, for most purposes, completely self-sufficient. Each file is based on a series of data segments or blocks called 'chunks'. Chunks consist of three distinct parts: the identity – 4 bytes of ASCII data – the size of the chunk in bytes, and the data itself. The last number is important because it is the number of bytes in the chunk, NOT, as may be expected, the relative offset to the start of the next chunk.

A theoretical C fragment representing a chunk could perhaps look like this:

```
typedef struct
ID ckID /* chunk identity
*/
LONG  ckSize  /*  sizeof
ckdata */
UBYTE ckData[/* ckSize /*]
} chunk;
```

in Assembler:

```
dc.l "BMHD" chunk identity
dc.l BmhdLen size of this
chunk
bitmap  dc.w  320,200  X,Y
resolution
ds.w 8 and so on. . .
BmhdLen    equ    *-bitmap
Calculate chunk size
even  Insert  pad  byte  if
reqd.
```

or in Basic:

```
1000 DATA "B","M","H","D"
:REM chunk identity=BMHD
1010 DATA 20 :REM chunk
size
1020 DATA 1,64,0,200 :REM
X,Y resolution (320*200 as
bytes)
1030 DATA 0,0,0... :REM
more data
```

These examples are meant as illustrations; they are not intended to represent each other, just the important parts of chunks. Table One has a complete list of the chunk IDs used by Amiga graphics programs. Typically, an IFF picture file will consist of several of these chunk types all chained together and enclosed in an IFF 'form'. Think of the chunks as biscuits and the form being the wrapper that contains them – each IFF form is a complete package.

How Chunk Data Is Arranged

When writing (or reading) an IFF chunk, the following points must be observed:

1) All 16 and 32-bit wide numbers (words and longwords) must be arranged high byte first. This is normal practice on the 68000 series of CPUs so your assembler/compiler should perform the conversion automatically. Basic programmers must ensure data is written in the correct sequence. It is essential the byte order is maintained for chunk size and chunk ID strings – but CPU ordering of chunk word and longword data is allowed. This last point will only affect IFF file transfers to/from CPUs which store the low byte first – for example the Intel range and the 6500 series.
2) Word and longword data MUST be aligned on an even address relative to the start of the file.
3) Every odd length chunk must be padded with an extra byte to ensure correct alignment of the next chunk. This pad byte must not however be counted in the chunk's data length.
4) IDs are constructed of four bytes of ASCII data in the range " " (space) through to "~" (tilde). Leading spaces are not allowed. Also note, because IDs are matched using a longword (unsigned long int) comparison, case matters. This system is used primarily for speed.

The Form Wrapper

When the chunks have been set up the whole file is enclosed in a wrapper which tells other programs this file is a valid IFF structure. The letters FORM (CAT or LIST) denoting the wrapper are always present as the first four bytes of any IFF file. If these are not present, the file can be identified as not IFF compatible.

Example #1 (p108) is an assembly language fragment showing how a partly initialised wrapper could be defined. The code is for an eight colour, 320 x 200 raster constructed from five chunks. The first chunk forms the IFF picture wrapper. The next three contain data specific to the layout and colours of the picture, the last is an array of interleaved bitmaps

FORM 11806	This is an IFF Form and it is 11806 bytes long
.ILBM	This is a graphics image
.BMHD 20	The bitmap header (pictures only)
640,400,0,0, 3,0,1,0 0 1,1 640,200	640x400 raster - starting at 0,0 3 planes, no mask, ByteRun1=On No transparency 1:1 Aspect ratio Source page is 640x400
.CMAP 12 128,64,128;..	12 bytes for the colour map
.CAMG 4	4 bytes for screen mode info
.BODY 11520	11520 bytes of ILBM body data

TABLE ONE: IFF files are complicated beasts, but this diagram should make their structure a little simpler to understand.

DATA TYPES AND THEIR MEANINGS

BYTE – 8 bit byte or signed integer. Range –128..+127
BYTE[ ] – an sequence of one or more bytes
UBYTE – unsigned BYTE. Range 0..255
WORD – 16 bit signed integer. Range –32768..+32767
UWORD – unsigned WORD. Range 0..65535
SHORT – psuedonym for WORD
USHORT – pseudonym for UWORD
LONG – 32 bit signed. Range –2,147,483,268..+2,147,483,267
ULONG – 32 bit unsigned integer. Range 0..4,294,967,295

The unsigned versions of these types are often used as bitwise flag variables: a BYTE has eight 1 bit flags. Assembly language programmers should make careful note of data typing when calculating addresses and offsets.

AMIGA SCREEN TALK

ViewPort – A window in the current screen (usually)
RastPort – The current screen (usually)
Raster – The horizontal lines making up an image
ILBM – InterLeaved BitMap, how images are store in memory

WHY ACBM FOR BASIC?

AmigaBasic uses an unusual form of bitmap structure called an ACBM or Amiga Basic Contiguous BitMap. The main file is very similar to a standard picture file with the important difference: the bitplanes are stored in such a way only one AmigaDOS read/write is required per bitplane. This results in a substantial increase in speed for reading IFF files from Basic. Converting to and from the two formats is a simple matter of using the utility files supplied with AmigaBasic on the extras disk.

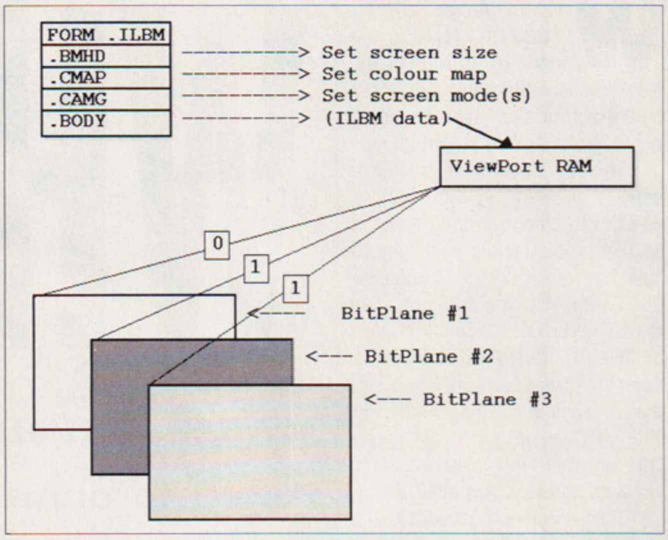
for the picture itself. Some of this data has not been initialised, for that, the contents of the individual chunks must be considered.

Chunk #0 (FORM): The start of any IFF form. This marks the start of all forms. See also: LIST and CAT. The structure of the FORM chunk is:

UBYTE[ ] ID Longword ASCII ID 'BMHD'
LONG length Number of bytes in this structure
UBYTE[ ] formType Longword ASCII type must be ILBM for graphics

Chunk #1 (BMHD): The bitmap header tells the reader program what to expect from the BODY data. Its contents are as follows:

UBYTE[ ] ID Longword ASCII ID 'BMHD'
ULONG length Number of bytes in this structure
UWORD w,h The raster's width and height 16 bits each
WORD x,y The pixel position for this image (normally 0,0)
UBYTE nPlanes Number of bitplanes in the BODY (source) data
UBYTE mask Type of masking used:
0 = no masking (normal opaque image)
1 = has a mask (interleaved with BODY data)
2 = mask has a transparent colour
3 = Lasso
UBYTE compression Type of compression used for BODY data
0 = no compression
1 = ByteRun1 (repetition) compression
UBYTE pad Padding byte only – must be=0
UWORD transparent This colour should be treated as transparent
UBYTE Xasp,Yasp Pixel aspect ratio. Width:Height
WORD pageW,pageH Source page's width and height.



Body data is read a byte at a time into each bitplane.

Chunk #2 (CMAP): Colour map data (palette) has three 8-bit entries with possible values from 0 to 255 for each colour register used. The Amiga uses four bits per register (12 bits=4096 colours) which must be packed in thee high order bits so: for writing, shift each register value four bits left; reading, shift four bits right. Expect to find up to 96 bytes (32 colours) in the colour map. To achieve correct alignment an extra byte may be added at the end of the data. Reader programs may ignore extra entries in the map. The CMAP's structure is a follows:

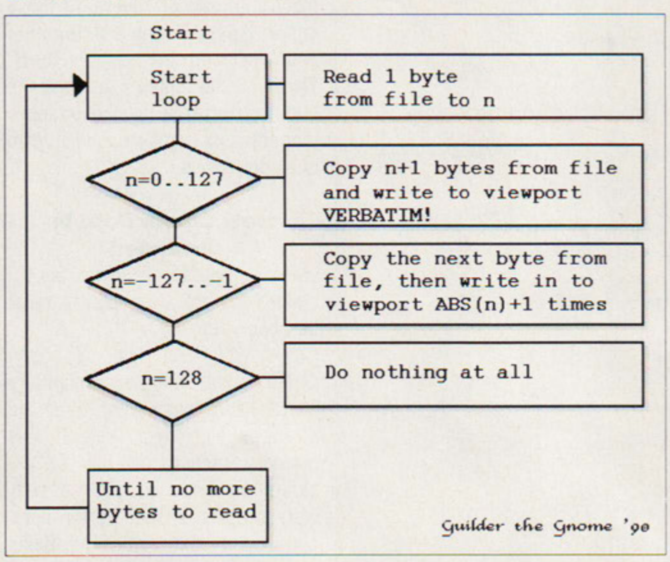
UBYTE[ ] ID Longword ASCII ID 'CMAP'
ULONG length Number of bytes in this structure
UBYTE red Colour register n red value 0-255
UBYTE green Colour register n green value 0-255
UBYTE blue Colour register n blue value 0-255
.
. Repeated for all colour registers
.
UBYTE pad Optional padding byte for word alignment

Chunk #3 (CAMG): This chunk is only required by the Amiga and must be supplied and read by all Amiga IFF software. As the standard holds at the moment, only 16 of the possible 32 bits of the CAMG flags are used. Some of the existing flags are not appropriate and must be masked out. Examples #2 and #3 show how this is performed in C and assembler although similar code will be required for all languages. The data structure for the CAMG chunk is simply:

UBYTE[ ] ID Longword ASCII ID 'CAMG'
ULONG length Number of bytes in this structure (currently 4)
ULONG camg The Amiga display (viewmodes) flags

Chunk #4 (BODY): This is the simplest structure to define since it is usually just a copy of the BitMap (image) from the screen. Sometimes, software may incorporate a mask or template interleaved with the body data. If this is present, reader programs may wish to remove it; masks are defined in the BMHD chunk. The body is defined thus:

UBYTE ID Longword ASCII ID 'BODY'
ULONG length Number of bytes in this structure
UBYTE data[ ] Array of data representing the image



As the ancient Chinese always said – a picture tells a thousand words. Here's the ByteRun1 algorithm in flowchart form.

The Big Squeeze

Getting a quart into a pint pot is not always possible, but ILBMs

are, by their very nature, large files, so they are sometimes compressed into smaller versions. In the IFF standard, just the BODY data is compressed, it would be nonsensical to code the complete file. The technique used is called 'ByteRun1 Encoding' and relies on byte repetition that is: if you find two or more sequential bytes are the same then count the number, and save the number found and the value. ByteRun1 compression is defined in the BMAP chunk. Pseudocode for the unpacker looks like this:

```
UnPacker:
LOOP until finished with the file
READ the next source byte into n
SELECT
IF n [1..127] THEN copy the next n bytes literally
IF n [-1..-127] THEN replicate the next byte n times
IF n [-128] THEN do nothing
ENDSELECT
ENDLOOP
```

WHY A STANDARD?

At first glance the whole idea of standardisation seems a little eccentric, however, as EA point out, this trick has been successfully employed by word processors for years. Every word processor has (or should have) some method to read and write raw ASCII files – remember ASCII is an acronym for American Standard Code for Information Interchange. Internally the software can employ any methods the programmer sees fit to make the program do its job most efficiently, externally all the user sees is a series of bytes representing plain text. In this way, word processors and text editors can exchange data very easily.

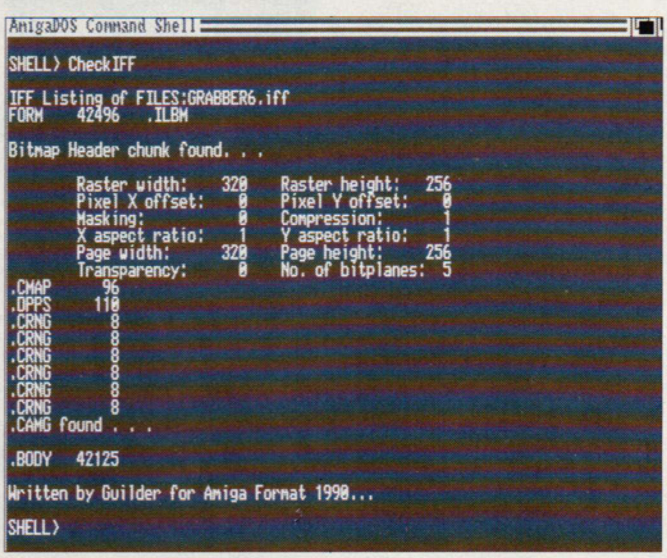
The packer is similar with a couple of extra considerations. A two byte repeat run should be coded as a replicate run unless it is preceded and followed by a literal run. In this case the complete run should be merged, then coded as a literal run. Three byte runs should always be coded as replicate runs. One extra caveat, every scanline of a raster is coded separately.

Using ChkIFF

This article would be very difficult to understand without some examples so to ensure this situation is not exacerbated, this month's coverdisk includes a simple IFF structure viewer. Unlike the ubiquitous VILBM or ShowIFF, the software – written specifically for this article – searches and displays all the chunks in an IFF file. To use the program simply type its name from the CLI and select the file to view from the file selector. Output can be redirected to the printer by typing ChkIFF >PRT:.

If ChkIFF encounters a chunk it understands, like a bitmap header, it decodes any relevant information. Lastly, because all IFF files follow roughly the same pattern, ChkIFF can decode IFF sound, music, animation and brush files too. To keep things simple, the program loops continuously until you select Cancel gadget on the file request.

Caveats: ChkIFF makes extensive use of the ARP system so you must have the ARP.LIBRARY present in the LIBS: directory of your boot disk. The program is not very intelligent, and cannot decode LISTs, CATs or other special forms. These are rare anyway so should not prove too much of a problem. ■



The *CheckIFF* program in action.

Table #1: Amiga IFF graphics 'chunk' types and their meanings

ILBM – Interleaved bitmap
BMHD – Bitmap header
CMAP – The colour map information
BODY – The ILBM data for the image
CAMG – Amiga specific information on screen modes: EHB, HAM etc
FORM* – Start of an IFF standard form
PROP – A shared properties chunk, information common to all forms
CAT* – A set of concatenated IFF forms
LIST* – Holds a set of PROPs and FORMs. Sometimes LISTs and CATs

Other 'chunk' and 'form' types for Amiga graphics IFF files

GRAB – The 'hotspot' of a sprite or brush
DEST – Bitplane scatter information
SPRT – This image is a sprite
CRNG – Colour Register Range info used by EA's Deluxe Paint
CCRT – As CRNG used by CBM's Graphicraft software
ACBM – Amiga Contiguous bitmap (form type used by Amiga BASIC)
ABIT – Amiga BITplanes (none interleaved bitmap from ACBM)
ANMB – Animated bitmap (form type used by Framer and Deluxe Video)
FSQN – playback sequence information for ANMB forms
ANIM – form type for animations developed by Aegis
ANHD – Animation header chunk for Aegis ANIM forms
DLTA – Delta mode data for Aegis ANIM forms
 – Four spaces! A filler chunk – contains nothing useful.

* These IDs may also appear in the form LISn, CATn or FORn where 'n' is the version number of the standard in use (0-9). All IFF reader software should be aware of these. LIST, CAT and the associated ID, PROP are advanced features of IFF beyond the scope of this article.

Example #1: Simple assembler include file for an IFF picture

```
form dc.l "FORM" Chunk #0 (The IFF wrapper)
dc.l FormLen
dc.l "ILBM" of type ILBM (graphics)
dc.l "BMHD" Chunk #1 the bitmap
dc.l BmhdLen
bitmap dc.w 320,200 Raster size in pixels
ds.w 0,0 start position of this image
dc.b 3 # of bitplanes
dc.b 0,0 no compression plus padding byte
dc.w 0 transparent colour
dc.w 10,11 aspect ratio
dc.w 320,200 size of source page in pixels
BmhdLen equ *-bitmap
even

dc.l "CMAP" Chunk #2
dc.l CmapLen
cmap ds.b 21 Colour data 21 bytes
CmapLen equ *-cmap
even
dc.l "CAMG" Chunk #3
dc.l CamgLen
camg dc.l 0 ViewModes
CamgLen equ *-camg
even

dc.l "BODY" Chunk #4
dc.l BodyLen
body ds.b 24000 The picture ILBM (3 bitplanes)
BodyLen equ *-body
even

FormLen equ *-form
```

Example #2: Setting CAMG flags in

```
#include <graphics/view.h>

#define BADFLAGS (V_SPRITESIVP_HIDEENLOCK_AUDIOENLOCK_VIDEO)
#define MASK (~BADFLAGS)
#define CAMGFLAGS (MASK & 0x0000FFFFL)
.
.
.
camg.ViewModes = MASK & myScreen->ViewPort.Modes /* writing */
NewScreen.ViewModes = MASK & camg.ViewModes /* reading */
```

Example #3: Setting CAMG flags in assembler

```
include graphics/view.i

* on entry a0 —> pointer to your screen's ViewPort!

write move.l vp_Modes(a0),d0 For writing the structure
and.l #CAMGFLAGS,d0
move.l d0,camg
rts

read move.l camg,d0 For reading the structure
and.l #CAMGFLAGS,d0
move.l d0,vp_Modes(a0),d0
rts

GENLOCK_AUDIO equ $200
VP_HIDE equ $2000
BADFLAGS equ (V_SPRITES!VP_HIDE!GENLOCK_AUDIO!GENLOCK_VIDEO)
MASK equ (~BADFLAGS)
CAMGFLAGS equ (MASK & $FFFF)
```

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THE PATH TO musical ENLIGHTENMENT

JON BATES checks out the latest developments on the music scene and looks forward to things to come.

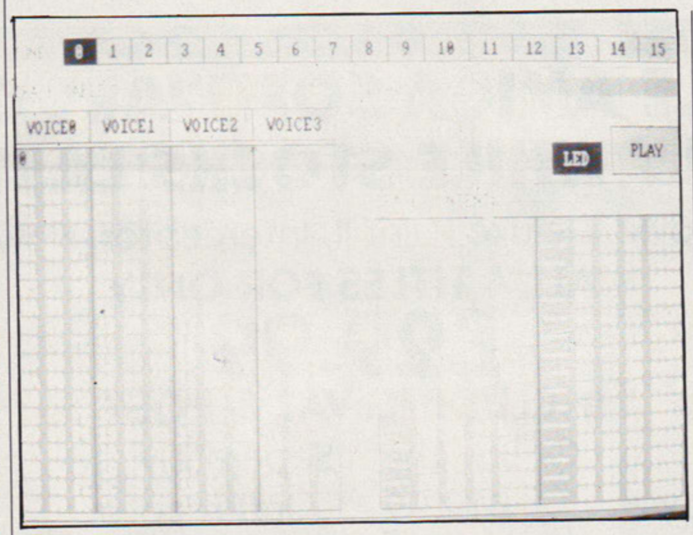
It's a funny old world. One minute the postbag is full of brand new software awaiting your immediate attention and the next your reviewing desk is as bare as a baby's backside. There are all sorts of goodies on their way, as you can see from the preview boxes, which will be reviewed in future issues. Don't despair, this month's cupboard isn't bare. We couldn't let you leave the music section empty handed and we do happen to have a couple of programs in the goody bag.

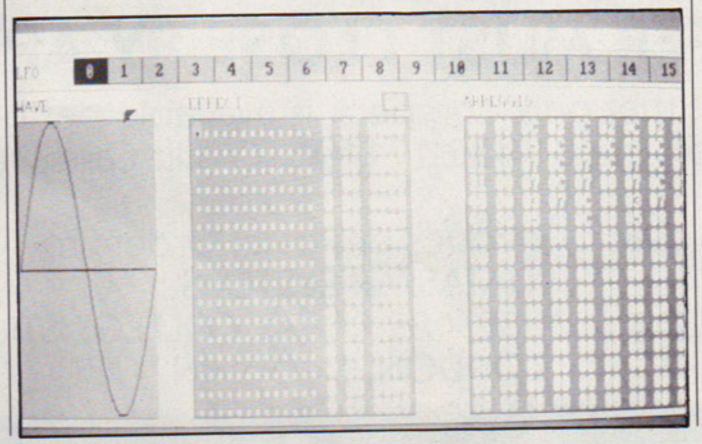
MUSICAL ENLIGHTENMENT

From Holland the UGA boys have been at work again and as promised a month or two back we have a copy of *Musical Enlightenment*. Although not a PD program in itself it is a relatively low-cost program that works very much on the basis of *Sound Tracker*. Apart from the basic sound sequencing program/page, there are three other sides to this program; the instruments module, effects module and sample module.

The sequencing module works in a similar fashion to *Sound Tracker* and several other sequencers including *MED*, which was on the Coverdisk of Issue 7. The principle is that you set up short sequences of notes that are typed into a 'contents' list – it seemed a bit more logical to me to think of it as a pattern. These are then set into a macro controlling window – here labelled a Table. The concept is simple. Any pattern created can be altered, transposed and the sound altered by the main controlling table. Note pitches and lengths are sorted out from within the smaller track contents window. The pitch is typed in by letter name plus octave. You can only have sharps so Eb would have to be written in as D#.

There are a large amount of steps listed down the screen and so the number of steps you leave empty between writing each note determines the length of the note and ultimately the rhythm of the pattern. You can also specify if there are any effects to be used on the note, which part of the sample envelope is to be used for the sound and the instrument number from the list of instruments. Once a pattern is created with its appropriate number it can be put into position by the overall track table. In both the pattern and controlling track table there is a possibility of 255 entries. A very powerful controller of sounds, once you get used to the idea.





Top Right: The sequencer page of Musical Enlightenment has the smaller sequences on the right of the screen and these are chained together by the large table on the left. Bottom Right: Alter the sound of the instruments...

There are simple controls for locating points in the track table. Start and End can be fixed anywhere and the current location is displayed. You can start at any location by running the cursor to that part and by hitting F3. A speed control slider, low pass filter and play icon complete the controls. Other features are a buffer which enables transfer of patterns from place to place; cut and paste if you like.

The instruments module is used to alter the sound of the instruments by allowing you access to the actual shape of the sound – known as the sound envelope. Instruments and samples in IFF format can be loaded up and altered at will. The lower half of the screen has an envelope display in which the attack, decay, sustain and release of the sound can be modified. Effects like vibrato, tremulo and delay can also be assigned to sounds and

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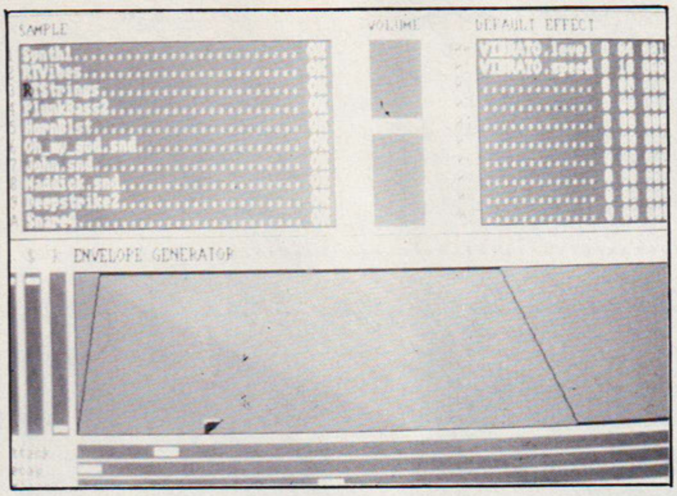
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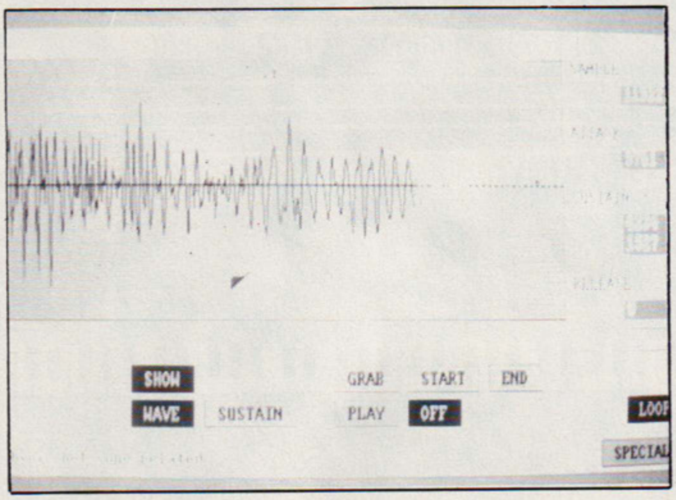
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called up from codes from the pattern page. One problem is that you can't actually hear the sound change, other than by setting the sound into a pattern and running the pattern whilst the instrument page is displayed by hitting the space bar.

The effects page lets you design your own special effects. You can opt for a variety of low frequency waveforms. Low frequency waves are used to modify sounds in all synthesizers and you can double or treble its effect and also create harmonics. You can draw your own waveform and as an additional bonus define an arpeggio – a run of notes that can be fired up when the command is inserted into the pattern page. The arpeggio feature greatly enhances the sound possibilities and saves lots of programming on the main sequencer page. The notes of the arpeggio, of which you can use up to eight, are written from an overlaid piano keyboard on screen. All the effects have their overall level and speed set individually.

The sample altering page is quite a tour de force and has many features which the designers of sampling programs could take note of. *ME* does not sample sound in itself but its editing facilities put most samplers to shame. Check this lot out.

You can choose a section of each sound that you want to sustain by drawing on the waveform display. Fine editing is achieved by moving cursor line to the start and end of the displayed sample. Sections of the sample that you wish to keep can be either saved to disk or put into a storage buffer. As well as the customary features such as data compression and expansion, altering the pitch of the sample and it's overall volume, you can also add another note to it whilst not loosing any of the Amigas note capability. It merely splits the sample frequency and plays it through the same sound channel. Anything that is stored in the buffer can be swapped or mixed with the existing new screen display. You can also draw your own samples and waveforms. The latter can be combined with the waveforms available from a menu so that you can in effect imitate an analogue synth.



...and then edit the samples or create your own waveforms. Samplers look out. This is a very powerful editor and sound creator indeed.

SNIPPETS

MUSIC-X

Music-X Junior was promised before Christmas but has finally arrived. Its progenitor, *Music-X*, has sold very well in the UK but we are led to understand that there have been various hiccups in the USA with the development company Microillusions. New software modules have been developed in the UK for the full-blown version of *Music-X* and these are now in America and in the process of being grafted on to the main program. However the *Junior* version is reviewed on Page 87, so check it out for the low-down on the low-price option.

PRO-24

The long awaited *Pro-24* for the Amiga has had its sections re-written according to the importers Evenlode and under the title of *Amiga 24000* will be unveiled at the Frankfurt Music Show. Just exactly what the new extras are is still a mystery. Bets are being laid as to whether it is a major re-write of the whole system that will pave the way for a whole series of new and interactive Amiga programs from Steinberg or features that program the internal chip. Perhaps they are stuffing in features from *Cubase*. Perhaps not. One thing is for sure, since the tentative rumours and a preview at the 1989 Frankfurt show it is taking an awful long time. One hopes it will still be a viable product when it arrives. Expect a full report soon.

DR T's KCS V3

Also winning a place in the long list of 'we are expecting delivery any day now' is the latest version of *Dr T's KCS*. According to our reckoning this upgrade should be version 1.7 but with a stroke of the marketing policy pen it is retitled *KCS V3*. One of its little goodies will be 32 tracks of automated mixdown with moving faders on screen and will cost about £225. *Level II* – the superior version – will set you back £299.

TIGER CUB

Tiger Cub, also from Dr T, is a small 12-track sequencing package with graphic and notation scoring and editing and this will retail for £99. Again it is due out soon for the Amiga.

COMING SOON

Thanks to some heavy-duty transatlantic phone calls we are awaiting some American software direct from the software developers themselves. Can't reveal what is on offer at the moment but you can be sure that they will be hot. Other things in the *Amiga Format* musical pipeline are reviews of studios that are using Amigas for programming and creating music. Commodore UK have recently hired a consultant for the promotion of the Amiga as a serious music tool to get it into studios etc, so watch this space, as they say. Next month we also hope to cover some of the products previewed this time.

OF COMMODORE AND KING'S

As an aside to the mainstream reviews, it may interest you to know that the *Dr T MRS* entry-level sequencing system (reviewed in Issue 2) has been bundled up by Commodore UK as part of their education package for schools and colleges. This package is the subject of some serious advertising and there are some pretty impressive sales figures already. Consequently *MRS* should turn up in many a music classroom and should make for a more interesting future in popular music when the current 12 to 15-year-olds hit the streets with homespun tapes.

Meanwhile Commodore in America have taken to using legendary blues guitarist BB King for promoting the Amiga as a musical tool. The full-page ad portrays the 64yearold BB draped around a monitor which appears to be running *DeLuxe Music* while also getting his arms around Lucille. Animal lovers and feminists should take note that Lucille is his guitar and the coat looks like a reworked acrylic car seat cover. Perhaps by choosing the least likely famous name to use an Amiga they hope to convince the US public at large that the Amiga is a musical tool for beginners.

Generally the program is a very powerful sound creating and sequencing package and offers the user many sonic possibilities for a very reasonable price. Since it will work on IFF samples you can hone up sounds from other programs and the sample page is one of the most powerful I have seen. While missing out on some of the standard features that most samplers have, like cross-fade and volume fade, it has the best editing features I have seen to date.The sequencing section will appeal directly to those of you who fall on the computing rather than the musical side of the fence.

Although easy to use, it does lack the directness and visual display that can be seen in other, albeit much more expensive, programs and I would have like to have seen some way of following the progress of the tune as it is being played through. ■

MUSICAL ENLIGHTENMENT

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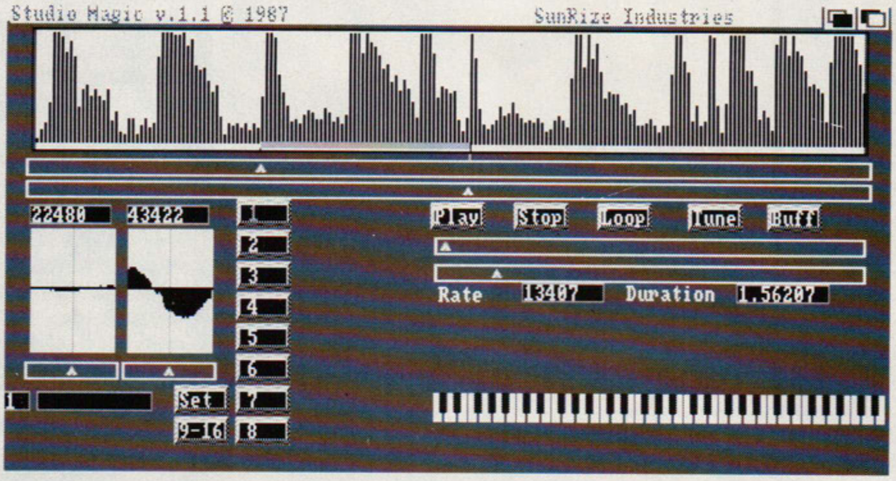
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STUDIO MAGIC

The other item in this month of scarce products is *Studio Magic*, programmed in America by SunRize Industries.

Although it has been around in the States for some time, *Studio Magic* has only quite recently been commercially available in this country. It is another budget sequencing, sample/sound creating and editing package. It also has a MIDI department and this is where the sequencing section is operated from.

All functions are accessed from one screen. Across the top of the screen is the sample buffer, with slider underneath that sets the sound editing sections. Two windows to the left of the main screen provide fine editing for the front and back of the selected section. The chosen section can then be expanded, compressed, reversed, phased, flanged, echoed, have a comb filter put across it with user-set filter frequencies and several other features (like echo with a user-definable number of repeats and duration). Once you have finalised the sample it can be stored in one of 16 storage buffers and put to use as a mapped sound across an external MIDI keyboard.



Below: The simple layout of *Studio Magic* with the sample buffer displayed across the top of the screen. Fine editing windows are on the left, play controls are on the right. Easy, isn't it?

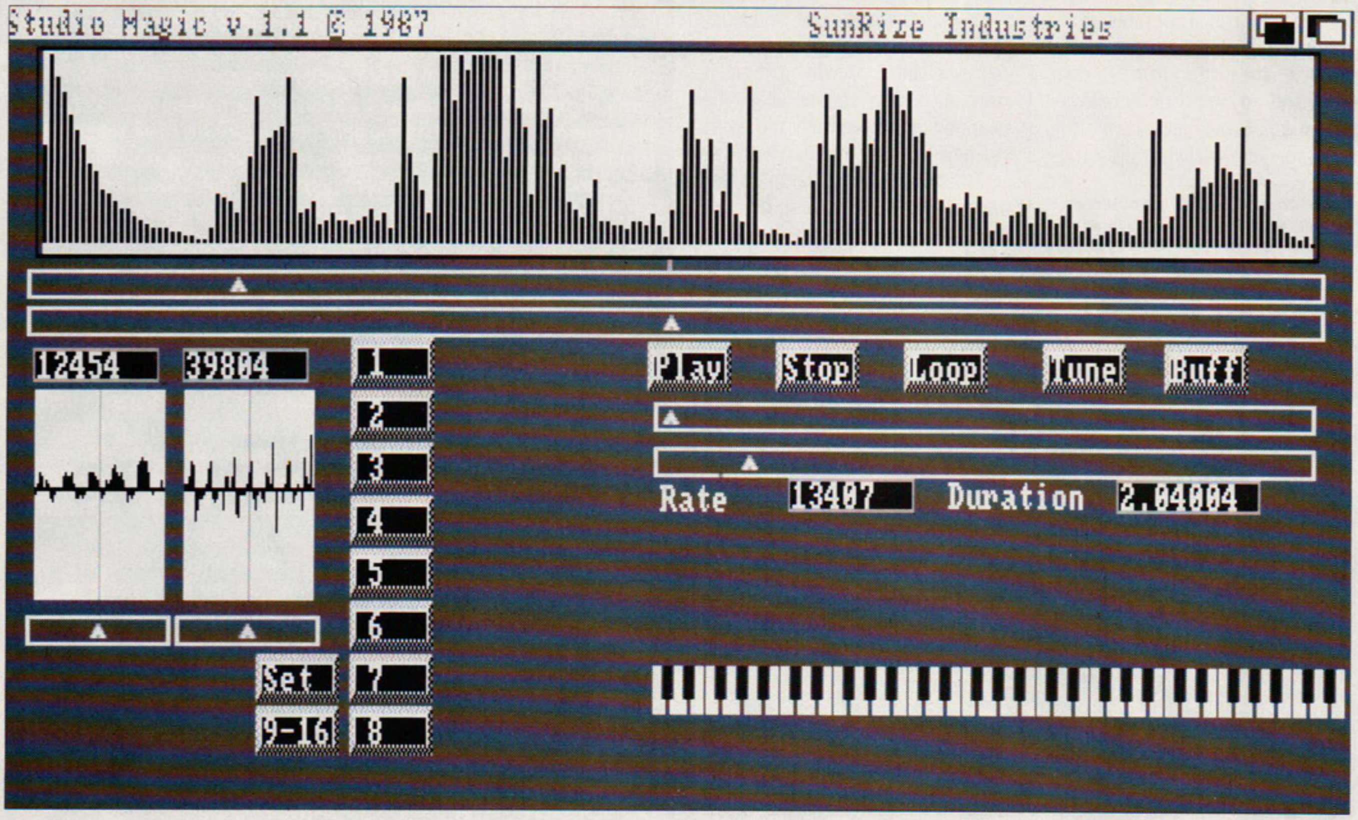
The sequencing section will allow you to overdub and it is also velocity sensing. However there are no editing features and this is really a considerable drawback as one mistake and it's back to the drawing board. There is also no possibility of quantizing any timing errors and this too gets a thumbs down. It can be set to work with external sequencers and drum machines as you can opt to have it synchronize itself with an external MIDI clock pulse. However it will only accept and transmit on one MIDI channel at a time, which is rather limiting. It will accept and modify IFF instruments as well as samples. Stereo or mono playback is switchable from the menu and all sequences can be saved and loaded separately from the samples.

Studio Magic is more for fun, for discovering the world of music and the Amiga, rather than serious composition and sampling work. It is definitely an entry-level program and as such it is very easy to get on with if you can work with its limitations.■

STUDIO MAGIC

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Thanks to Tony Clarke for sending me his copy for review.



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WORKBENCH

A bumper selection of tips to help you get the very best from your Amiga and your queries answered by resident technical guru of no fixed intelligence, **JASON HOLBORN.**

OFF TO THE FLICKS

Help! Having recently gained an interest in the world of DTP, WP and CAD, there is one major problem that I have encountered – that damned interlace flicker!

I can't afford a 'Flicker-Fixer' and I don't have an Amiga 2000, so what can I do to rid myself of this monstrosity? I have heard of a screenm referred to by many as 'those widely available plastic screens', but I have yet to see one advertised. What is it, where can I get it and how much will it cost me?

Finally, will ECS solve the flicker problem?

D Harris
Bradford

So you think interlace flicker looks awful on a standard Amiga monitor? You should see it on a multi-sync monitor like mine!

The plastic screens that you refer to are available for many different makes of computer, including the Amiga, and their sole role in life is to cut down screen-glare to a more useable level. There are basically two types available – Mesh and Polarised filters. The best type to go for is the Polarised filter, but they do tend to be rather expensive. The cheaper mesh variety do a similar job, but picture quality does tend to be degraded.

If you require such an item, then Cavendish Commodore Centre sell a filter called Jitter-Rid for £15.95. Cavendish can be contacted on 0533 510066.

In a way, the Enhanced Chip Set will indeed fix the interlace problem – but only if you have an expensive multi-sync (just like the Flicker Fixer!) The ECS does not completely rid the Amiga of interlaced screen modes, it just adds new (non-interlaced) screen modes to the existing ones. For video work Interlace is very important, so removing it altogether would be a big mistake by Commodore.

Most software will not immediately be able to take advantage of the new ECS screen modes and will therefore have to be re-issued in an ECS-compatible form. However, some software, for example Pro-Page and A-Max, will be able to take advantage of ECS immediately.

EXPLODING PROBLEMS

I am having problems trying to run a program in my Workbench 1.3 StartUp-Sequence. The program in question is *Exploding Windows* included on the March '89 coverdisk of *ST/Amiga Format*. I have edited my StartUp-Sequence file so that *Exploding Windows* is automatically loaded during boot up, but the initial CLI window remains open. How do I close this window? I have tried the `EndCLI > NIL:` command, but the window still will not open!

What you require is a little PD utility program called RunBack, that is available within the Fish collection of public domain disks. Contact any of the PD libraries listed in the PD Update section to get hold of a copy.

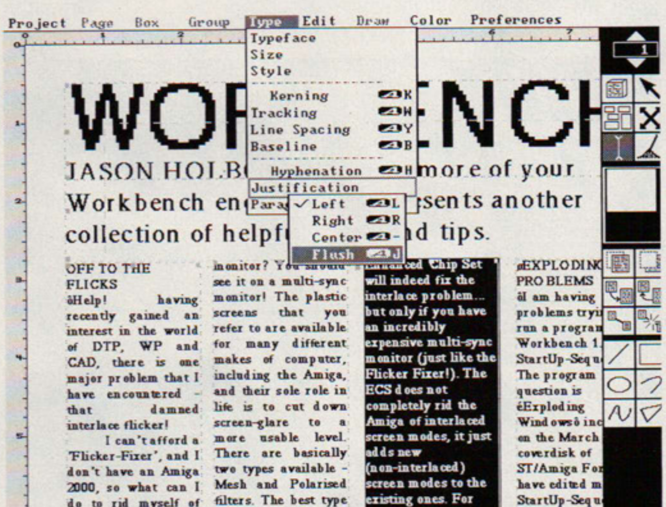
1.4 QUESTIONS

I have seen adverts for the Starboard 2 RAM expansion which I think is a good 2Mb board, but it is rather expensive. Are there any 2Mb RAM packs available for the Amiga 500 for under £300?

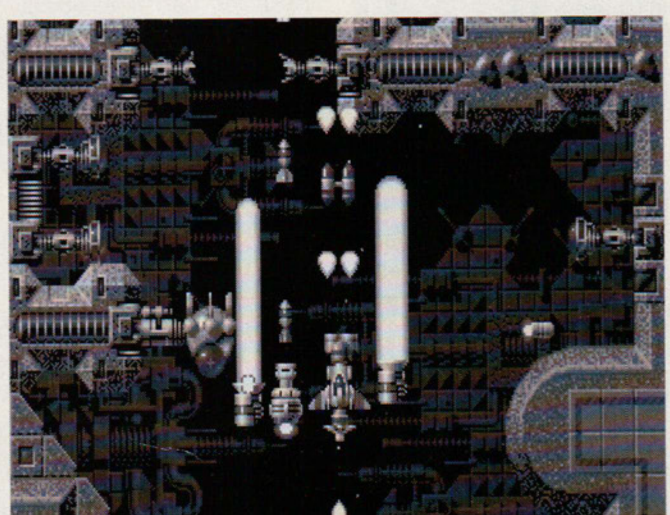
I am told that 2Mb RAM boards for the 500 need their own mains power supply to work, which could be a problem for me as I already have a socket filled with more plugs than is probably safe. Is this correct?

While I'm here, could you answer the following questions about the soon to be released Kickstart and Workbench 1.4 (or should that be Workbench 2.0?).

1. I read an article that claimed that Kickstart/Workbench 1.4 will no longer include those infamous guru meditation messages. Does this make the Amiga completely crash proof? (Is such a thing possible?)



Unlike the vast majority of software, *Pro-Page* will take advantage of the ECS immediately – others will have to be modified.



Is games software safe from Kickstart/Workbench 1.4?

2. How much is the upgrade going to cost me?

3. I have been told that 1.4 will not run all my games software that previously worked with Kickstart/Workbench 1.2/1.3. Is this true? If this is the case, I think I'll give 1.4 a miss as myself and my brother will miss playing games such as *Xenon II*. I don't want to buy the 'Change Kickstart' board that you featured in your January issue as I am worried that I may damage my Amiga.

4. Will 1.4 work with the A500 and when will it be available?

A Parker
London

You're right, 2Mb RAM expansions are rather expensive. The cheapest that I have been able to find is available from Memory Expansion Systems Ltd, for £289. This is an internal unit which (you'll be pleased to hear) doesn't require a separate power supply.

The Guru is indeed dead – shame, I say! According to Commodore, the infamous guru meditation numbers have now been replaced with System Messages.

It is certainly not true that all games will not work with 1.4 – if this was the case, Commodore would certainly not be very popular with software developers. This would also be suicide for the Amiga, as no developers are going to write software that will only work with 1.4, cutting off users who still use 1.2 and 1.3. Just like when 1.3 was launched, it is inevitable that some games will stop working with 1.4 – not because of Commodore, but because of rule-breaking coding on the part of some game programmers. If developers don't follow the guidelines laid down by Commodore, then they have nobody to blame but themselves when software fails.

Price and availability of 1.4 is still undecided, but it's a fair bet that 1.4 won't appear until at least early next year – see how long it took Commodore to finally release 1.3 – and that was nothing more than a bug fix in comparison to the complexity of 1.4! 1.4 will definitely work with the A500.

LISTEN HERE, LUVVIES!

Ok, luvvies, so you're not talking to your Amiga and it's causing you a lot of heartache? Am I right? What I advise you to do is to get in touch with your friendly Workbench Helpline. They'll provide guidance concerning just about any problem that comes between an Amiga and its owner. Don't be embarrassed, these problems are quite common. Do you hear me, luvvie?

For an understanding shoulder to cry on, write to JASON HOLBORN, *Amiga Format*'s resident Amiga agony aunt, at the following address: WORKBENCH HELPLINE, *Amiga Format*, 30 Monmouth Street, Bath BA1 2AP. Jason is waiting for your letter!

KICKIN' THE TURBO

Could you please enlighten me as to the effects of upgrading the standard Amiga 500 with one of the 68020 or 68030 accelerator boards with co-processor that I have seen in various adverts within *Amiga Format*. Is the fitting of these boards a complex task and what effect will one of these boards have on the performance of my Amiga. Will standard Amiga games still run? If my machine is speeded up considerably, will the games also be speeded up to a point where they become unplayable?

I Saunders
Runcorn, Cheshire

Processor cards are really only of use if you use your Amiga for particularly complex number crunching applications such as Ray Tracing, Solid Modelling etc. For such applications, the time taken to generate the final image is hampered by how fast the processor can perform the necessary calculations. With the addition of a maths co-processor such as the 68881 (or the faster 68882), things really start to cook. Processor cards are expensive beasts, therefore they really are only worth buying if you are truly serious about your number crunching applications.

A cheaper solution is to treat yourself to one of the 16 MHz 68000 cards that are available from companies such as Third Coast Technologies. These cards consist of a faster version of the 68000 that is already installed within your Amiga. Some older software will not work with '020 and '030 cards, but all software will work with a 'turbo-charged' 68000. These cards are also considerably cheaper than even the cheapest '020 card. Third Coast sell their 16 MHz CMI board for just £180 pounds. Third Coast can be contacted on 0257 472444.

Early IBM PCs suffered from these speed-up problems. These days, most games are written to abide by strict timings that remain the same regardless of the processor used. However, some games that involve complex mathematics (Virus for example), are enhanced by the addition of a faster processor.

VIRUS ADVICE

Although the common 'boot block' virus is practically extinct, the IRQ virus still continues to wreak havoc throughout the Amiga world. 'Parasite' viruses work by attaching themselves to the front of other programs. If the virus hasn't already been loaded into memory when you run the infected program, IRQ will be brought to life before running the actual parent program.

If you get a warning from a virus killer that this type of virus is in memory, normal procedure is to check the programs within your C and root directories. However, tracking down infected programs isn't as easy as it may first seem...

Although tracking down infected programs is usually a straightforward task (as long as you have a program such as the PD killer, KV), there are often cases where the infected program can be disguised. This can happen if an infected program is packed using a cruncher program. If the program was infected with IRQ before crunching took place, the crunching process could well hide the tell-tale signs that allow such viruses to be tracked down. However, when the crunched program is run, the de-cruncher that is attached to the crunched program will decrunch both the program itself and the virus. If you can work out which cruncher was used to pack the program, it may well be worth your while to decrunch the program, run it through your virus killer and then recrunch it. Recently packed programs are probably crunched using the excellent *Power Packer* utility that is available from most PD libraries.

Greg Hewitt-Long
Devises

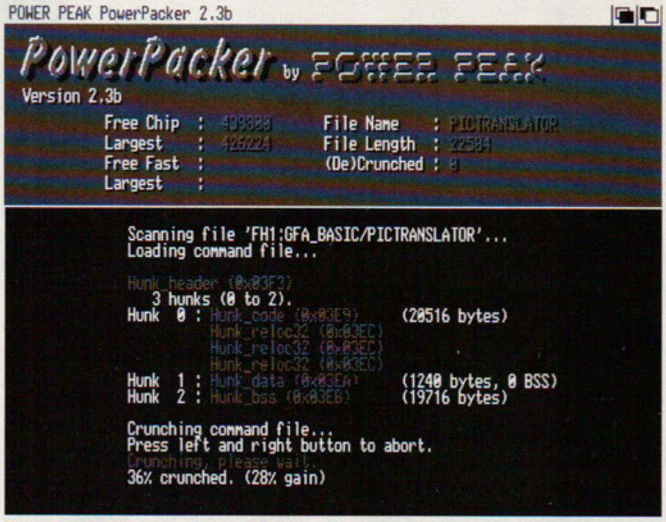
BE MY PAL

PAL Amigas are wonderful – while our cousins across the pond have to put up with a maximum vertical screen resolution of 400 lines, we Europeans have access to a wacking 512 lines! Not only are screens displayed in a high resolution, but for applications such as DTP, those extra lines can be a real life-saver.

Unfortunately, not all software supports a PAL resolution screen – games and many older serious packages are the main culprits. While this is not a particularly great loss for games players, it can be a real pain for serious applications. For example, what's the point in using a video titling package if your text can only appear in the top two thirds of the screen?

There is, as always, a way around this problem which should make most of those NTSC packages work with a full PAL resolution screen. The solution comes in the form of a little known program called *OverScan*, which can be found on Fish Disk 133. Once run, *Overscan* tells the operating system to try to open every window and screen that would normally have only stretched to 200 lines, to a full 256 lines (or 512 if in high resolution).

D Walton
Grimston



***Power Packer* – a virus' best friend?**



Is it an A2000 or an A500? Read 'A500 casing update'.

A500 CASING UPDATE

The search is finally over. After many months of hard investigating, *Amiga Format* has finally tracked down a replacement case-kit that will turn your A500 into an A2000 look-alike – complete with detachable keyboard, the works. The kit is available from HB Marketing on 0895 444433. At the time of going to press, no details are available but as soon as we get more info, you'll be the first to know.

IMMUNISING WORKBENCH

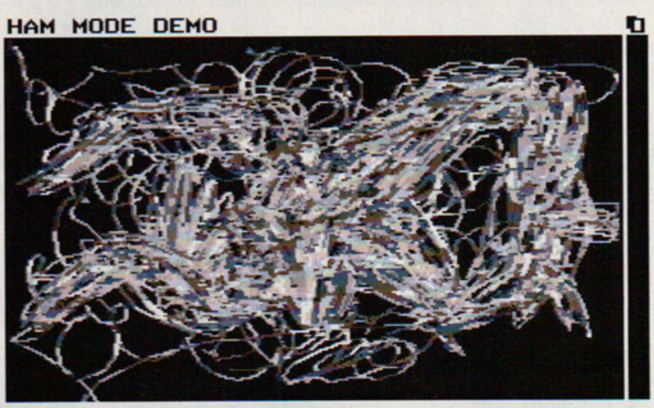
Workbench is without doubt the most used of all program disks that you're likely to own for your Amiga (apart from *Tetris*, of course!) Chances are that when using your Amiga, you'll load Workbench eventually. However, what happens if your Workbench disk becomes infected with a virus? Basically, you've got problems, as that virus will eventually find its way onto any disks that are inserted after Workbench is loaded. There is a way to make your Workbench disk check that it is always clean of viruses, using the enhanced Install command on 1.3 Workbench. All you have to do is to edit your StartUp-Sequence file and add the following lines:

```
Echo "** Checking for
Bootblock Virus...."
Install DF0: CHECK
IF WARN
   Echo "*** VIRUS FOUND
***"
ELSE
   Echo "Workbench boot-
block is still clean."
ENDIF
```

If a virus is found while Workbench is booting, wait until the boot process has finished, remove the Workbench disk and TURN OFF your Amiga and load your favourite virus killer. If you just re-install the disk using the virus-infected disk, chances are that the virus (which will be in memory) will automatically write itself back to the disk as soon as it thinks you are trying to erase it.

M Fleming
Paisley, Scotland

HOLDING ON FOR HAM



DigiPaint 3 **it may not be, but at least you can add HAM graphics to your AmigaBasic creations.**

Ever wished you could access HAM (Hold and Modify) mode from AmigaBasic? Just think, 4096 colours on screen at the same time! With the current releases of both HiSoft Basic and AmigaBasic, 32 colours is about as colourful as things get, but with the source code below you can 'HAM up' your AmigaBasic programs with ease.

To be able to use this listing, you'll need both `exec.bmap` **and** `intuition.bmap` **to be present within either your current directory or within the LIBS: directory of your boot disk.** `Exec.bmap` **can be found within the BasicDemos drawer of your Extras disk, but** `Intuition.bmap` **will have to be constructed using the** ***ConvertFD*** **program on the Extras disk.**

```
' ** HAM MODE FROM AMIGABASIC **
' ** WRITTEN BY NIKI MURKETT **

LIBRARY "exec.library"
LIBRARY "intuition.library"
DECLARE FUNCTION AllocMem& LIBRARY
SCREEN 1,320,200,1,1
WINDOW 1,"HAM MODE DEMO",(0,0)-(300,180),0,1
PALETTE 0,0,0,0
PALETTE 1,1,1,1
FOR i% = 2 TO 6
    CreateNewPlane
NEXT i%
Ham

' ** DEMO **
' ** The following Lines are here to demonstrate the
' ** HAM-From-BASIC code. These can be removed.
DemoLoop:
    x=MOUSE(1):y=MOUSE(2):f=MOUSE(0)
    b=INT(RND*16)+16
    r=INT(RND*16)+32
    g=INT(RND*16)+48
    LINE (oldx-1,oldy)-(x-1,y),r
    LINE (oldx,oldy)-(x,y),g
    LINE (oldx+1,oldy)-(x+1,y),b
    oldx=x:oldy=y
    IF f<>0 THEN CloseNicely
    GOTO DemoLoop

' ** End Of Demo Source **

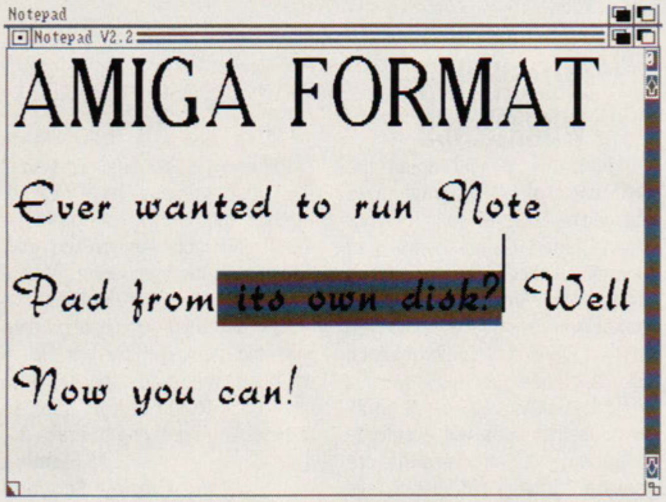
CloseNicely:
    WINDOW CLOSE 1
    SCREEN CLOSE 1
    LIBRARY CLOSE
    END

SUB CreateNewPlane STATIC
    bitmap& = PEEKL(WINDOW(7)+46)+184
    bitplane&=PEEKW(bitmap&)*PEEKW(bitmap&+2)
    wdepth%=PEEK(bitmap&+5)
    IF wdepth%>5 THEN EXIT SUB
    newplane&=AllocMem&(bitplane&,65538&)
    IF newplane&=0 THEN ERROR 7
    POKEL bitmap&+8+wdepth%*4,newplane&
    POKE bitmap&+5,wdepth%+1
    IF wdepth%<5 THEN CALL RemakeDisplay
END SUB


SUB Ham STATIC
    viewmode&=PEEKL(WINDOW(7)+46)+76
    POKEW viewmode&,2^11
    CALL RemakeDisplay
END SUB
```

STAND ALONE NOTEPAD

How to create a disk that will automatically boot *NotePad.*



Fed up with having to load *NotePad* from the Workbench? Now you can create your own *NotePad* boot disk.

So you want to create a bootable disk that will automatically load and run the Workbench *NotePad* program, eh? That certainly seems to be the general consensus of opinion if the amount of phone calls we have received is anything to go by. Well, *Amiga Format* listens to what it's readers want, so here's all the info you need to create your own *NotePad* disk.

The first thing you must do is to load Workbench into your machine. Once the Workbench screen appears, double click on the Workbench disk icon, then double click on the System drawer to get to the CLI icon. Once the CLI icon appears, double-click on it and the CLI springs to life.

First of all, we need to format a disk that will be used to hold the *NotePad* program. At the CLI, enter the following command and then press Return.

```
Format DRIVE DF0: NAME "NotePad" NOICONS
```

After a few seconds of disk access, the *Format* program will ask you to insert the disk to be formatted. Now is the time to remove your Workbench disk and insert your blank disk. Once you've done this, press Return and the formatting process will begin.

After what will seem an eternity, the disk format will finish and you will be returned back to the usual CLI prompt. Remove the disk, re-insert the Workbench disk and enter the following commands (press Return after each):

```
Copy C:Copy!MakeDir!Install!Ed RAM:
Path·RAM: Add
```

You have now set up your working environment to allow you to copy files to your new NotePad disk without having to constantly swap disks. Now enter the following commands to start constructing your NotePad disk (don't forget to press Return after each):

```
Copy DEVS:clipboard.device!printer.device RAM:
Copy DEVS:parallel.device!serial.device RAM:
Copy DEVS:system-configuration RAM:
Copy LIBS:icon.library!diskfont.library RAM:
Copy SYS:Utilities/NotePad£? RAM:
Copy DEVS:Printers/<Printer Driver> RAM:
```

In the last command, the <Printer Driver> should be replaced by the filename of the printer driver that you use. In most cases, this will probably be EpsonX.

If everything went OK, you're ready to start transferring the necessary files to your *NotePad* disk. Remove your Workbench disk and re-insert the disk that you have just formatted. Now enter the following commands:

```
MakeDir DF0:S
MakeDir DF0:LIBS
MakeDir DF0:DEVS
MakeDir DF0:DEVS:Printers

Copy RAM:NotePad£? DF0:
Copy RAM:£?.device DF0:DEVS
Copy RAM:£?.library DF0:LIBS
Copy RAM:system-configuartion DF0:DEVS
Copy RAM:<Printer Driver> DF0:DEVS/Printers
```

Once again, the <Print Driver> must be replaced with the filename of the printer driver that you copied earlier. Once all disk activity has ceased, you're ready to configure the disk ready for use. Enter the following command:

```
Install DF0:
```

All that now remains is to create a StartUp-Sequence file that will tell the Amiga to load *NotePad* every time the machine is booted from your *NotePad* disk. This is achieved by entering `Ed DF0:S/StartUp-Sequence`. After a second or so, the CLI text editor will appear. Just enter the line *NotePad* and press Return. To save your StartUp-Sequence to disk, press the Escape key (an asterisk will appear at the bottom of the window), followed by 'x' and finally Return.

Your *NotePad* boot disk is now complete. To test it, just reset your Amiga with the *NotePad* disk in the internal drive and you're away. Note that this version of *NotePad* will only give you access to the standard Topaz font – if you want others you're going to need to create a FONTS directory and copy across the fonts that you require (speak to your friendly Amiga expert for help on this). Happy Word Processing!

EVERYTHING COUNTS!

We want your tips! If you've discovered a little tip-ette or trick that will help other Amiga owners to get the most from their Amigas and software, then Workbench wants to hear from you. Not only will you be helping out tens-of-thousands of fellow Amiga owners, but you stand a very good chance of picking up £50 for your troubles! If your tip is the best of the month, then there'll be a cheque winging its way to you faster than you can say 'Where's my blooming cheque?'.

You don't have to be a techie to send in tips to *Amiga Format*. If you've mastered a particular item of software, then why not send in some tips that will help other users of that package – *DPaint, Music-X, Aegis Sonix* and *Professional Page* are prime examples of packages that could do with some attention. For the techies among you, we'll take anything from AmigaBasic dabbling to advanced hardware programming in Assembler.

Send your tips to: WORKBENCH, 30 MONMOUTH STREET, BATH BA1 2AP. Don't forget, there's £50 waiting for you!

This month's Workbench winner is Niki Murkett **for his amazing HAM-from-Basic tip.**

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My Paint is a painting program for youngsters aged 4 to 8. It is very easy to use and understand and no reading skills required. Various special effects are included such as colour cycling and sampled sounds to go with the 28 colouring pictures provided. The child can either colour the pre drawn pictures or design their own pictures. A pictorial guidebook is included.

My Paint £34.95



At the Zoo is part of the Electronic Crayon colouring book series. Over thirty animal pictures are provided to colour with information and realistic sound effects for each picture. When each picture is finished it can be printed in a variety of ways using any preferences printer. Banners, sideways prints and calendars can be created by using the special print options provided.

At the Zoo £24.95



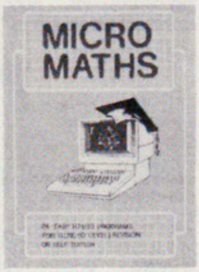
Kidtalk is an amazing talking word processor for the young student. It can be used as a first word processor to write and read stories and reports. The real difference is that this WP actually talks and can speak the words or sentences as you type them. The voice can even be changed to suit! Great for homework and general fun and learning.

Kid Talk £34.95



Designasaurus is a dinosaur construction kit and information data base. Using the program you can study the habitats and details of many dinosaurs and print them out. You can even take a dinosaur into its environment and live out the cruel world as it was. When you have had enough of studying then you can design your own dinosaur! T-Shirt printer routine is included.

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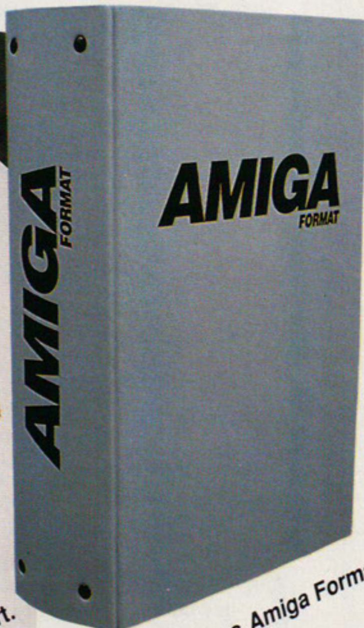
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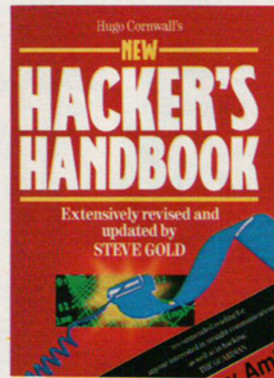
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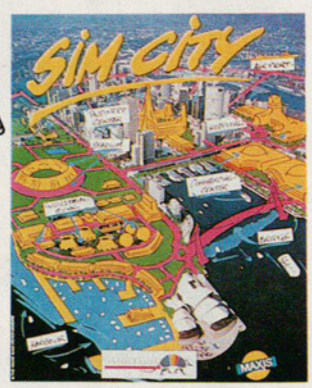
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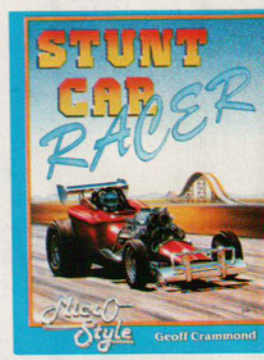
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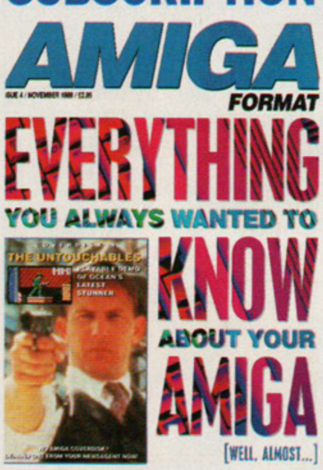
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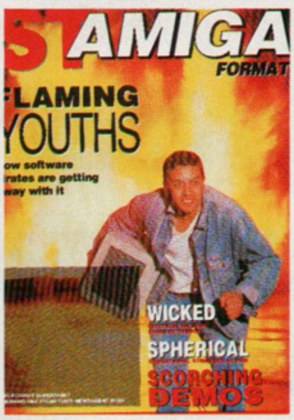
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GAMEBUSTERS

It can be jolly tough saving the world from impending doom, especially if you can't get past the end-of-level guardian, so here's what every good pixel hero needs – Gamebusters!

ROCK AND ROLL

This great marble game may be giving you so problems, so over to the man that's played the game to death, Mark Robinson.

Level 1 – Easy Living. Warp to 33 by using the third repair kit you come to on the hole next to it.
Level 2 – Up and Down. Warp to 20 by going clockwise around the outside level of eggs about halfway through the level.
Level 3 – Silent Moving. Warp to 24 by filling in the middle row of a 3x3 hole near the start with the nearby repair kits.
Level 4 – Time is Money. Warp to 11 by using the single repair kit opposite the middle of three arrows, then keep rolling right across the hole before smashing up all the eggs.
Level 5 – Words R Easy. Crush all eggs for extra ball – use repair kits to get to those in the shape of GO IN and the second pipe takes you to the other two.
Level 6 – Geometric. Warp to 8 by using one repair kit on each space where the railing is missing in an area of many ventilators.
Level 7 – Secret Area. The secret area that is here can only be discovered from Level 27.
Level 8 – Varied Offer. First level with a continue shop.
Level 9 – Crossroads. Throw all four switches in top half to remove ventilators and magnets. Crushing all the eggs puts your energy back to maximum, but this is hardly worth bothering with because you do get a full energy charge at the start of each level.
Level 10 – Try the Tree (time limit 9.00 mins). Tight time limit. A total of six red keys are needed and at least 2700 coins before going to the bottom of the tree.
(+ one blue key).
Level 11 – Beam Me Up. Crush all eggs for 15,000 points. Five smashable walls need breaking and with one armoured ball you can do this.
Level 12 – Bombastic. Crush all eggs for a 500 coin bonus.
Level 13 – Tricky Track (time limit 8.00 mins). Take icy U-turns by bouncing off walls.
Level 14 – Way Out. Warp to Level 18. There are four potential routes to the transporter to the exit. The right hand one is the one to go for but do take care not to waste any of your keys.
Level 15 – Fragile Action. Second level with a continue shop. To get through the green lock in the repair kit area, the fragile floor must be completely cleared to reveal a green key.
Level 16 – Air Fortress. Trickiest level yet in the shape of an aeroplane plus the word FLY.
Level 17 – Open and Close.
Level 18 – Running Man (time limit 3.30 mins). Going all the way round the outside is easiest but nets no points.
Level 19 – Helping Hand.
Level 20 – Your Choice. The quickest way to the exit is to continue right from the furthest repair kit and follow the obvious route – make sure you have plenty of repair kits as you can't return.
(+1 parachute).
Level 21 – Push and Fall.
Level 22 – Riddle Rooms. Crush all the eggs for an extra life. Make certain to get all available repair kits, 'cos they're handy.
Level 23 – Disk Access.
Level 24 – Skating Rink (time limit 7.00 mins). Make certain you buy the spikes.
Level 25 – Arrow Action. At the arrow junctions, the directions required are: up, up, right, up, left, up, left, and finally up for the transporter. Crush all the eggs for a boost back up to full energy.
Level 26 – Don't Panic.
Level 27 – Radiation. Warp back to Level 7 by moving all the balls on the platform out from the centre. You now have a bomb to visit the secret area when you warp to 7. On visiting the secret area the balls must be moved two spaces to left and right to warp to 30. Don't use the green key to go through the pipe.
Level 28 – Think Twice.
Level 29 – Free Fall.
Level 30 – Roller Coaster.
Level 31 – Crazy Dreams. Crush all eggs for full energy.
Level 32 – Castle of Doom.
Level 33 – Bonus Level. All exit holes go to Level 2.

General tips

Buy repair kits and parachutes whenever possible. Before buying armoured balls check for smashable walls in the vicinity. Speedups help in areas with ventilators and magnets, and to go against the flow of arrows. Using eyes will help you get round levels with time limits. Enter your name as COUNTRY on the high score table and you'll be able to pick the tunes.

Mark Robinson
Calne



GEMINI WING

To choose a start level, load the game, press P to bring up the password system and enter:

LEVEL 2 = MR WIMPEY
LEVEL 3 = CLASSICS
LEVEL 4 = WHIZ KID
LEVEL 5 = GUNSHOTS
LEVEL 6 = DOODGUYZ
LEVEL 7 = D GIBSON

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AUSTERLITZ

This superb wargame may just be giving novices a few problems, so take some advice from a veteran:



GENERAL HINTS

1. Before you can get very far into the game you must understand the ordering system. A handwritten order is dispatched by a rider who takes it to the relevant corps commander while (hopefully) avoiding the enemy and any routing units. If received, orders are not carried out immediately – relevant commanders must be informed and their units may be several miles from the HQ. You may never even know whether your orders have reached their destination or if they have been misunderstood down the chain of command.

2. It is a good idea to ask for battle reports every 1/2 hour or so, especially from units which are heavily engaged. The corps commander will normally send a couple of messages with the rider who returns his combat reports, giving information concerning the status of his men. Even if the news seems irrelevant, you will learn more about how your troops are doing than if the corps commander only seldomly sends a report.

3. Artillery is precious and should not be wasted. Royal Horse Artillery can move very fast – they can shell one target and abruptly change location to shell another. Move your artillery to high ground as soon as possible where it has a clear field of fire all around and is difficult to dislodge.

4. Do not try ordering units which are disordered or routing because they will ignore you. Routing units usually retreat away from the enemy, but are in danger of blundering into deadly artillery fire. Beware if they pass near your HQ because several important riders may be caught up in the rush and killed. Routes are worse than disorders and routing units may finally become disordered before they rally and can be ordered again. Keep a unit out of battle for a while when it rallies and when engaged, ensure allied units are ready to give support if necessary.

5. Surround stubborn enemy units instead of assaulting them head-on. This will ensure that no messages leave or reach the unit and it is completely isolated making it easier to destroy.

6. It is possible for 'Blitzkrieg' tactics to succeed. Your cavalry, while being supported by horse artillery, can penetrate the enemy lines. When the enemy is sufficiently weakened, he can be routed by the slower moving infantry and foot artillery units.

HINTS FOR GENERALS: NAPOLEON

1. Davout's corps are several miles from the H.Q. and your riders will take time to reach him. He, with Merle, Fery and Margaron, are in danger of being cut off from the rest of the army. Order these corps as soon as possible or they will form a defense line and retreat if they can't hold ground.

2. Trielhard's divisions can form a rearguard to replace lost or routing units. At the end of the day, they can be used to charge the enemy off the field when he's weak.

3. Reinforce Lannes as he prepares to repel the attacks of Bagration, two miles to the east. He is heavily outnumbered with his 16 units facing Bagration's 24 and although an offensive line will need more men, he can defeat Bagration with minimal casualties when defending, especially on rough ground.

4. Girschkowitz, Puntowitz and Schlapanitz (are you taking the pitz? – ed) are usually the scenes of fierce battles so try to hold them if you can. Your troops can later regroup here. Remember, the terrain favours a defensive stance.

HINTS FOR GENERALS: ALEXANDER

1. The Austrian militia under Kollerwrath are poor quality and can be relied on to rout very easily. However, they are good cannon fodder and can be sacrificed to off artillery fire while your crack troops attack the enemy elsewhere.

2. Bagration is in a prime position to attack the northern French flank and if he advances fast enough (by smashing Lannes' corps) he can be a serious threat to the enemy HQ. Napoleon may even have to move the HQ further from his troops and waste valuable time reinforcing Lannes troops.

3. You have enough forces to split the French army in half, possibly at Kobelnitz. If this is achieved, communications will be cut because all the riders trying to barge through your troops will be killed. Napoleon must now either send his riders on a long detour or try to break through your troops, both of which will be costly and time consuming. During this period the French commanders will use their own initiative and (hopefully) launch unsuccessful and uncoordinated attacks. It's doubtful the French can recover the position and victory should be complete.

Stuart Hardy
Sheffield

NINJA WARRIORS

Try out these handy martial arts cheats.

Put CAPS LOCK on and then type the cheat you require and then turn CAPS LOCK off.

THE TERMINATOR – Ninja body parts explode when you die.

MONTY PYTHON – Enemies walk on backwards.

SKIPPY – Enemies bounce.

A SMALL STEP FOR A MAN – Moon gravity. Jumping baddies jump right off the screen.

STEVE AUSTIN – Pressing S during play toggles slow motion on and off.

All of the above cheats can be combined and run together if you are feeling in a really silly mood!

Dan Marchant



TREASURE ISLAND DIZZY

Here are some objects and where to use them.

Chest: below cliff
Snorkel: in water
Gravedigger spade: in the grave, which is on Island 2
Magic stone: Totem pole, which is also found on Island 2
Detonator and dynamite: in the mine which is on Island 1
Axe and bible: bridge on island 1
Pogo stick: pogo place on ship
Sack of gold coins: shop
Fire-proof suit: in the smuggler's cave on Island 2
Brandy: shop
Gold egg: shop
Brass key: smuggler's cave
Crowbar: rock in water.

Ian Whitaker
Buxton

STORMLORD

Handy hints and helpful tips.

1 At the start of the game go left and over the statue. Avoid the bouncing ball by moving as close to the volcano as you can and be ready to pass over it as the ball goes up. Once through, collect the key and be ready to blast the enemy wizard who appears in front of you. Go back through the volcano and over the statue, then on to the skull and finally on to the tall stone.

Avoid the blue caterpillars by jumping on to the top ledge first and then down on to the middle ledge and finally to ground level blasting any you see as you go. Move towards the oak door which will disappear, and then hop up on to the teleport stone. The eagle will carry you left and to the first fairy. Waste no time and as soon as she is free get back on the teleport and the eagle will take you back (remember, you only have a limited amount of time to complete your task).

2 When the eagle returns you, go left and collect the pot of honey. Go back right again, avoiding the teleport stone at this stage, and jump on to the little ledges. Be careful however as these have a tendency to crumble from underneath you dropping you in to the venus fly traps. Once over, continue on above the bees and exchange the honey pot for the key. Don't hang about though as the bees waste no time getting there, so be ready to jump up immediately. You can now go down and free the second fairy.

3 Continue right, over the bees and be ready to blast the green goblin coming toward you. Jump up and over the white daisies and prepare to do battle with the falling eggs. These hatch into flying demons and they are nasty pieces of work so try to blast the eggs as soon as possible, even while they're still falling. Remember to keep on the move at all times. Once through the egg bombardment another green goblin confronts you so be ready to blast him. Continue on, avoiding the bouncing ball as described earlier, and open the oak door freeing the elusive fairy number three.

4 Do not go on to the teleport in front yet, but go back in the direction you just came. You will re-engage the egg-demons so be prepared. Once through them, jump back over the white daisies but watch out for the green goblin. When he turns his back on you get ready to blast (note: he does not go beyond the daisies so you are safe behind them). Once he is out of the way, continue left back over the bees and over the little ledges (this is when they are especially likely to crumble!). Before you go on the teleport stone continue left, jump up and get the blue brolly which will protect you from the acid rain. Go back right and on to the teleport stone and the eagle will carry you right.

When he drops you, jump over the tall stone and the teleport stone and you will arrive at a set of volcanoes. Ignore the blue acid rain drops as you are protected by the brolly. Concentrate on the bouncing balls only and as soon as you're through you are attacked by a group of flying dragons, so be ready to blast as they come at you fast and furiously – jumping as well as blasting helps a great deal as they swoop down on you. Others come along at ground level which may be avoided by the jumping. Once through, an enemy wizard will confront you so be ready for him. Once he is out of the way continue right, jump up and pop – fairy number four is freed.

5 As soon as the fourth fairy is set free the flying dragons attack again, so blast them as you make your way back. Continue on to the volcanoes, through them and to the teleport stone. The eagle swoops down and carries you back left. Once you are dropped, waste no time and go back right. Once again, go over the small ledges and past the bees. Destroy the green goblin coming towards you and continue on. Jump over the daisies and do battle with the egg demons.

Once through, blast the other green goblin you encounter, avoid the bouncing ball and go on to the teleport stone in the little cove to your right. Here the eagle takes you on a one way trip. This is the last fairy to be rescued on this level and there is no teleport stone to take you back. Should you for some reason not have released any of the other four fairies then your quest on this level is over and you have, I'm afraid, failed in your task.

When the eagle drops you, go forward – destroying the enemy wizard that confronts you. Continue on and jump on to the ledges. Get the pot of honey and go back left. Here you're confronted by another enemy wizard. Blast him then jump and swap the honey for the blue brolly above you. Immediately the bees surround the honey pot and you will find they are buzzing a little too low to get past. Go back right so they are off the screen and when you return they should have moved up making your passage past easier. Unfortunately, this causes another enemy wizard to appear but he is easily dealt with.

Continue left, jump up and get the key leaving the brolly. By this time another enemy wizard will have appeared so be ready as he wastes no time firing at you. Once destroyed, go right and presto! Yes, yet another enemy wizard on the scene. Dispose of him too and continue on. Avoid the bouncing ball and don't swap the key for the blue brolly as you pass over it. Once on the top ledge, whatever you do, don't jump over and open the oak door ahead of you, because this is a trap and if you do you'll waste your last key. Drop down instead and a green goblin greets you, continue and fairy number five awaits. Level one is now complete and all five fairies released.

Richard Caylor
Brentwood

DRAKKHEN

Here come tips from the programmers themselves...

When you find yourself outside, it is still possible to escape from a monster. It is very easy but you must be quick. The method is as follows: when the monster appears, press the RETURN key, you will automatically do a half turn, then take advantage of this and run away... beware, if you stay in the same place the monster will return. This trick is very useful, especially when you're not feeling 100% on form.

To help guide you in the exterior world (outside dungeons), note that the sun rises in the east and, of course, sets in the west. Following a disaster, the moon can be found in the south. The moon will not move. Another way of guidance is observing the shape of the mountains. For this method it is best if you draw a small plan to help guide you when you move.

Beware! Certain monsters are poisonous, for example, certain spiders, snakes and maybe even the scorpions. If you have been stung by their poison you will not die by the sting, but your life points will decrease rapidly until you are dead. After each fight you must check the fitness of your character. If you see the word 'poisoned', drink the flask (if you have it). If not, you must look for it immediately. You can also escape this stinging situation by using the healing powers of the group.

When you are with Hordtkhen, the dragon prince of the first dungeon you encounter, go immediately to the sister Hordtkha who can be found immediately due south. With a little luck you will find the temple. It is the magic place where you can recuperate and recover lost life points.

Again with our friend Hordtkhen, to de-activate the field of magnetic forces, all you need to do is press the button which can be found under the triangle with the point on top. Then you can take the path to the left – be careful not to be too aggressive and you will find information. The door which you will see to the left of you is the door for the kitchens and the cellars. Take a torch from the kitchen, if you have the intention of going down to the cellars however, be careful. The door is locked with a key that be found somewhere in the dungeon. And be extra careful because a snake lurks in the kitchen and the cellars and it's poisonous.

When you are with Hordtkhen, you can enter the armoury (the right hand door at the entrance), but only at night because the guards are sleeping. Once inside you can help yourself to the arms that are there (these take the form of swords and shields).

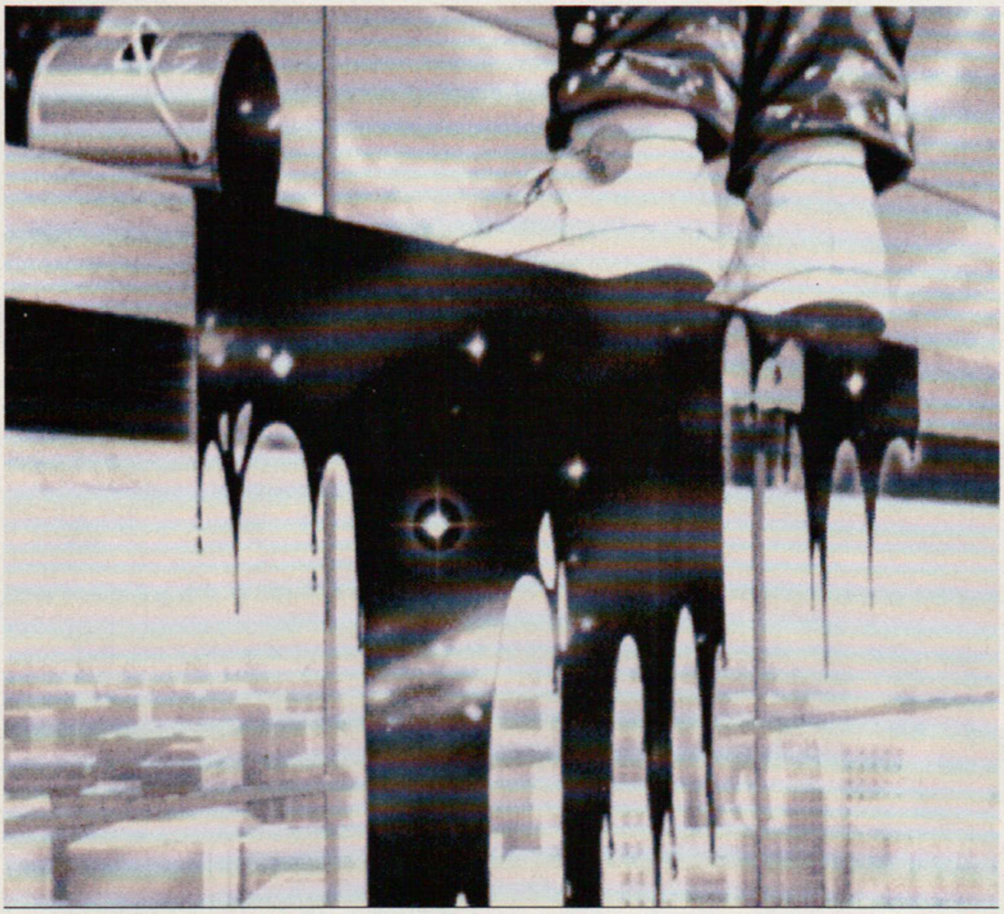
If your magician has enough experience points you are going to benefit from quickly made spells. You can for example use magic to quickly explore an unfamiliar dungeon. It is dangerous and unnecessary to send all your troops to explore. For this type of situation the invisible spell is also useful. Using all this you will be well prepared for the dangers.

Do not attack everyone you meet. You will follow many paths and meet many strangers who are a vital source of information. Saving a situation can only be carried out if your characters have come to a stop.

Drakkhen Programmers
Courtesy of Infogrames, France

FUTURE WARS: TIME TRAVELLERS

Palace's great arcade adventure has some tricky problems buried in it, so here's the complete solution. The best way to use this guide is to find the bit you're stuck on, read a clue and then close the mag until you're completely flummoxed on another bit.



Take bucket. Examine buttons. Operate red button. Operate window. Go north through window. Go wastebasket. Take plastic bag. Go top right corner of carpet. Operate carpet and take key. Go washroom. Operate cupboard door. Take insecticide. Go toilet door. Operate door. Take red flag. Go sink. Use bucket on sink. Go north door. Use bucket on door. Go east door. Operate door. Go east when door opens.

Use key on second bottom cupboard door from left. Examine typewriter – 40315. Go desk. Operate drawer. Take paper. Examine map. Use flag in hole in centre of map. SAVE game at this point.

Exit east. Examine keypad. Operate keypad – punch in each number (40315) before ceiling descends. Go north then east. Examine photocopier. Use paper on opening. Operate green button. Operate red button. Take documents and move quickly to pool of light to make use of the teleport.

Walking only on the green, go to mosquitoes (don't get too close). Use insecticide on mosquitoes. Go west. Look for glint of light. Examine glint. Take pendant. Go west. Go to foot of tree on left. Examine base of tree. Take rope. Use rope on right hand branch of tree. Wait until man comes to swim. Take tunic and slacks. Exit west. Approach guard. Use pendant on guard. Go north and exit west behind castle. Go to base of large tree. Operate tree. Examine ground. Take coin. Exit east. Go thatched building. Operate door and enter. Use coin on innkeeper. Listen to gossip. Leave pub. Go guard. Use pendant on guard. Exit west into castle. After talk with Torin exit east. Take lance from sleeping guard. Go north and exit west behind castle. Go tree and operate lance on habit. Return to lake. Use plastic bag on lake. Quickly go west, south, centre bridge and use bag on wolf. Go door. Operate door.

Follow monks clockwise round room always. Go west door. Operate door. Enter and go to monk. Go hall. Go east door. Operate door. Enter and talk to monk. Go hall. Return west room. Take cup. Go north room. Use cup on barrel to right of ladder on second tier. Return to east room. Examine Father Superior when asleep. Take device. Use device on cupboard to right. Take card. Return to wine cellar. Use device on barrel at top of ladder. Exit north. Examine the base of the glass case to find the gas canister. Use the card on the console.

In ruins. Examine rubble bottom right to find blowtorch. Exit middle east. Go east bottom of screen. Go west to white rubble. Examine white rubble. Take fuses. Operate rubble in centre. Operate manhole cover. Go down. Go east until you find the tap on wall. Use blowtorch on tap. Go south and west, continue until you see creature attacking woman and child. Use blowtorch on creature. Exit up. Go doors. Use lance on camera. Enter. Examine coin return of newspaper machine. Take coin. Use coin on money slot. Examine coin return. Use coin on money slot. Take paper. Enter train. Off train go south, down stairs. Use fuses on fuses at base of stairs on left. Go up to stand behind inspector. When hostess makes-up, exit through arrows up elevator.

In cell. Use key on airduct. Use gas on airduct. Quickly use newspaper on airduct. Exit east (don't panic, all is well!). In cave, go girl. Take gun. Follow girl. SAVE game. The next sequence is an arcade game in which you have to kill all Crughons – concentrating on the red squares first. Shoot leader on platform when he enters the second time. Examine girl three times to get invisibility pill and pendant. Use pendant on girl. Examine Crughon body. Take card. Up ramp to enter ship. Use card on Card Reader. Go case. Operate case. Take garment. Use garment on camera. Go case to lie down. SAVE game. Operate case. When land base go to left/right of door. Use pill on hero when door starts to open. Quickly exit and hide behind boxes at front of screen. Operate box on left and climb in. The six minute countdown starts when exit north through door.

Go right. Descend second ladder down. Go right. Descend second ladder down. Go right. Descend first ladder down. Go left. Descend first ladder down. Go right. Descend first ladder down. Go right. Descend first ladder down. Go left. Descend first ladder down. Go left. Descend first ladder down. Go left past symbol. Descend first ladder down. Go left, descend first ladder. Go right, descend first ladder. Go right, descend first ladder. Go right and up first ladder. Go right and up first ladder. Go right and up first ladder. Go right and up first ladder. Go right and up first ladder. Go right and down first ladder. Go right and down first ladder. Go right and down first ladder. Go left and down first ladder. Go left and down first ladder. Go left and down first ladder. Go right and down first ladder. Go left. Keep going, and down first ladder. Go right to computer room. Enter.

Use card on console on left (you should now have about 2 mins 30 secs left). Quickly exit room and go left and up first ladder. Go right up first ladder. Go left up first ladder. Go right up first ladder. Go right up first ladder. Go right up first ladder. Go left up first ladder. Go left up first ladder. Go left down first ladder. Go left down first ladder. Go left down first ladder. Go left down first ladder. Go left down first ladder. Go left up first ladder. Go left up first ladder. Go left up first ladder. Go right up first ladder. Go right past symbol up first ladder. Go right up first ladder. Go left to exit...

Happy ending (unless you do just happen to be a dinosaur).

Brian Burke
Nottingham

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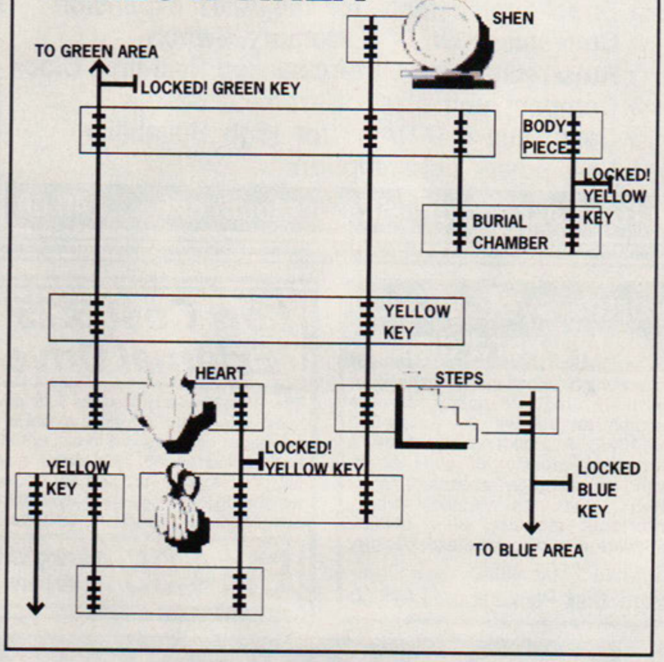
STOCKPORT
6 Mealhouse Brow, (Off Little Underbank), Stockport. Manager: Ray
Tel: 061 480 2693
Closed Thursday

EYE OF HORUS

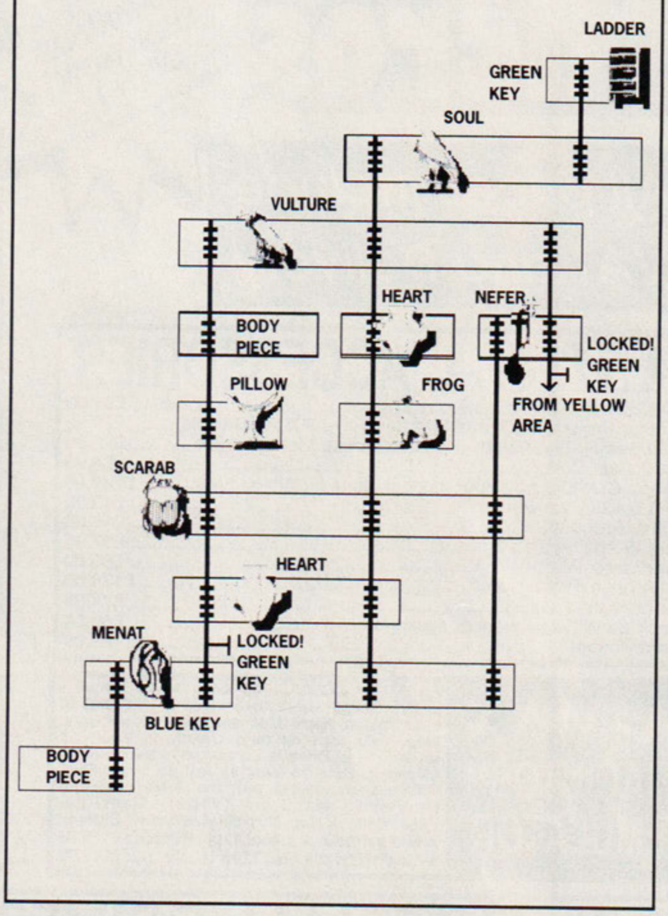
From Logotron come these handy maps and a nice cheat.

In the credits section of the game type SPAM and the game will start. You will now have infinite lives and you will not need colour-coded keys to be able to use the locked lifts – this means that you can easily access most of the game. If you want to meet Set, he is through the blue locked lift.

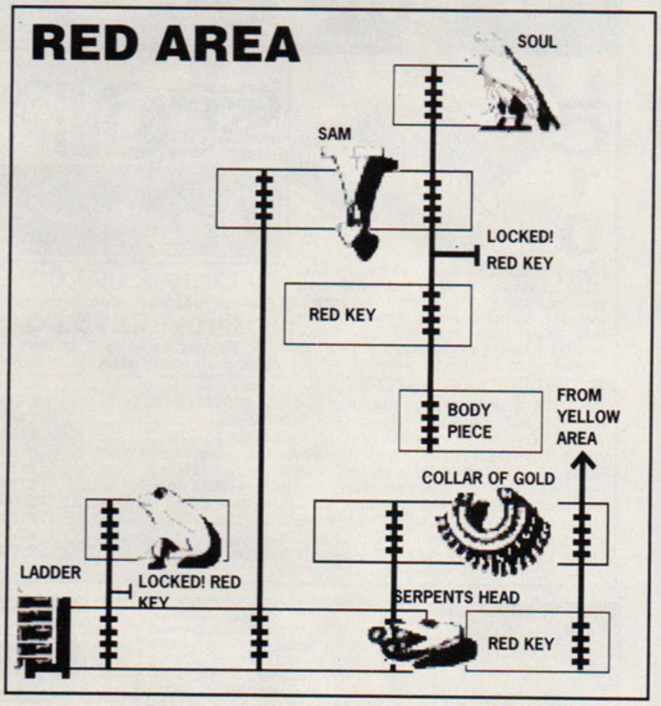
YELLOW AREA



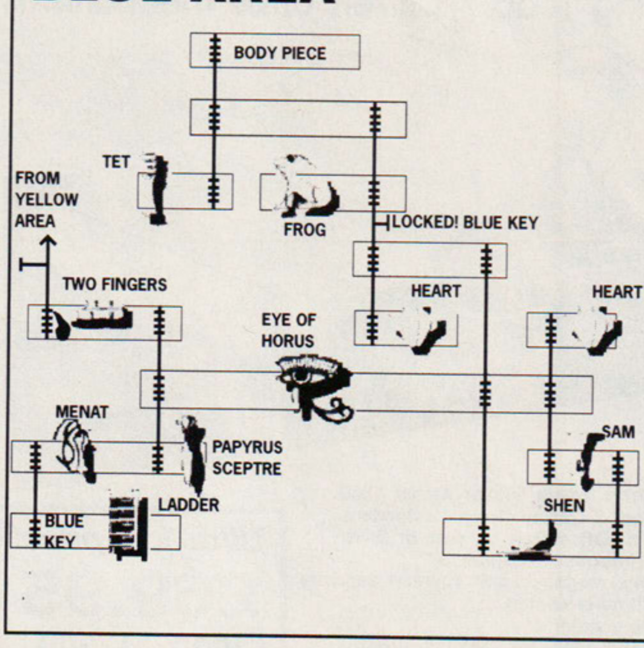
GREEN AREA



RED AREA



BLUE AREA



WINNERS' BOX

Cheats prosper with *Amiga Format!* Brian Burke, Mark Robinson and Stuart Hardy agree because they've each earned themselves £50 of software simply by putting pen to paper and passing on their hints, tips and maps. Get in on the act, send useful info to: GAMEBUSTERS, AMIGA FORMAT, 30 MONMOUTH ST, BATH BA1 2AP.

FORMAT LETTERS

Another batch of contentious communications. Your own contributions should be addressed to BOB WADE, 30 Monmouth Street, Bath BA1 2EP. Sorry, but we can't give any personal replies. None of your drawings can be returned...

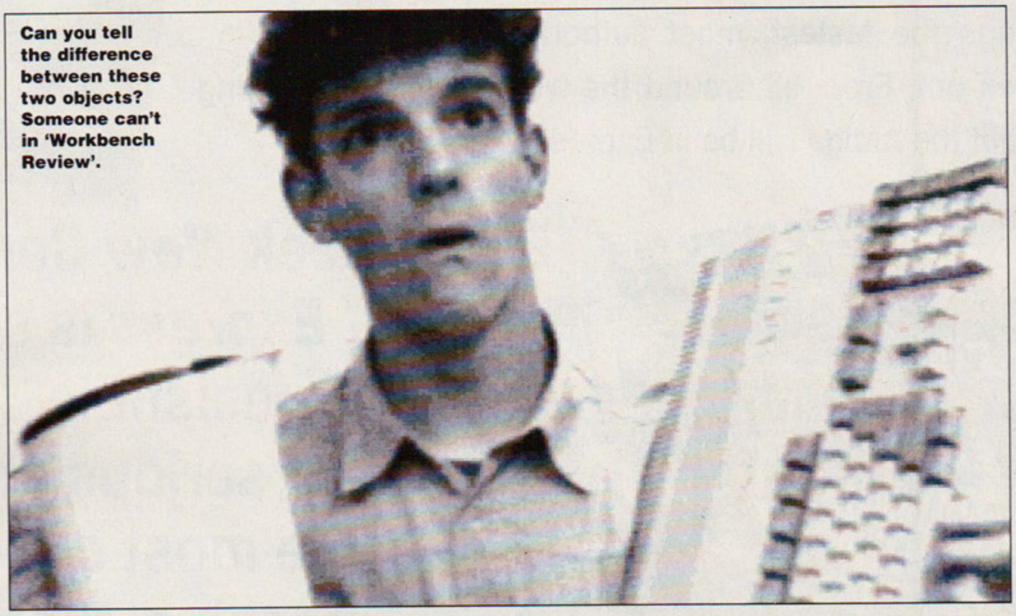
WORKBENCH REVIEW

PRIZE LETTER

I have owned my Amiga for two years now and have decided that it is time to expose what a con these so-called 'Workbenches' are.

To try and show what a rip-off they are I have given ratings to the different aspects I think are important, to show the pointlessness of owning one.

Sex Appeal – 11% It doesn't do much for me. Being flat and square, I can see no possible use in this important area.
Flavour – 23% One lick confirmed it all, the disk tastes like plastic.
Aerodynamics – 74% Flies well when thrown properly, but the landing was shoddy and my original disk smashed. Good job I made a back-up.
Disco Effects – 05% Only two lights (one red, one green), which are very small, make up the laser effects and they don't even strobe in unison. The irritating whirring soundtrack when I put disks in is pathetic – I thought the Amiga was state-of-the-art? Come on, Commodore!
Communications – 10% When I typed in chatty lines of conversation my Amiga replied with garbage like "Error 120, argument line invalid or too long." Are other Amigas as nasty as this?
Gameplay – 00% None of the Workbench sprites would even move until I shot them with the primitive arrow weapon.
Sound – 09% Only the crappy soundtrack I mentioned earlier.
Addiction – 23% I soon gave up.
Overall – 20% I hope to have shown the horrors of 'Workbench' to prevent young children from parting with their money until the above gripes are improved. Well, my job is done, back to the cushioned white room.



Can you tell the difference between these two objects? Someone can't in 'Workbench Review'.

PS My mouse is faulty because it will not squeak and its tail is too long. Any suggestions?
PPS I got electrocuted when putting water in the slot at the right of my Amiga, so it is useless as a replacement kettle as well. Anyone know what the slot is for?
PPPS I'll review my football next week. What a con they are!

Karl Drinkwater
Stretford, Manchester

I have a similar problem with my kettle – I keep trying to load Kick Off *into it but it just seems to melt the disk. For making the whole team laugh you get a T-shirt and binder, but they probably will not let you have the metal spokes for the binder where you are. Never mind, the T-shirt has longish arms that can be tied behind your back.*

GET YOUR BACK UP

The main reason that I am writing to you is that I need a good file copier to allow me to make back-up copies of my games and 'serious' software. Before moving on to this point though, I wish to make a confession. When I had a C64 I used to swap many pirated games with my friends and I will not try to make excuses for this as there are none.

I was greedy and immature, as most pirates are who will not work for, then appreciate, a game that they have bought. Instead they, as I did, want it all. But the funny thing is, no matter how many games I stole (I believe that is the term) I was never happy. I did not realise that true satisfaction stems from getting a good game you can spend some time on and feel you have deserved.

Anyway, I grew up and upgraded to the beloved and powerful Amiga. I now detest piracy and although I have had many opportunities to receive 'free' games I have turned them all down and will continue to do so. I realise the issues involved in piracy and respect the trouble the programmer and publisher have gone to, to produce our silicon entertainment. Anyway, I choose carefully and only buy good games which will last and are good value, eg *Blood Money*, *Speedball*, *Starglider 2*. The only distributing I have done is PD and shareware with all files and text intact.

Anyway, back to the point of my letter. Can you recommend a good file copier for making back-ups? I am not bothered about anything being compressed, I just want exact copies.

Karl Drinkwater
Stretford, Manchester

I have no intention of recommending any copiers, because you are not allowed to take back-ups of games and virtually all serious software is unprotected, so you do not need a copier to make legitimate back-ups for personal use. I agree it would be nice to back-up games so that disk failure is not a disastrous occurrence, but until 'key' disks and other such systems are widely available on Amiga games, you can't - so don't. Remember, kids – just say no!

WIRED FOR SOUND

As an avid reader of your magazine I am aware that you aim to help people wherever and whenever possible. In view of this, would it be too much for me to ask you to send me a circuit diagram and component list of a suitable audio digitiser for connection to a Commodore Amiga. I have tried to obtain such a document from several outlets but have, as yet, been unsuccessful.

A few months ago I sought the same for a midi interface and had no problems in getting one, since when I have built a successful project. I now wish to build a sampler for myself, as I feel that even the lowest priced model available is still too expensive for such a simple piece of equipment.

Shaun Payne
Nelson, Lancs

Our parent magazine ST/Amiga Format *did carry a project for making a sound sampler, but sadly the back issues of this have sold out. Plans are still afoot to arrange some DIY projects though, so I will have a think very hard about whether to re-run it in a future issue of AF.*

REPAIR DESPAIR

Having read in various magazines the advantages of purchasing a computer from a specialised dealer as opposed to one of the larger chains such as Dixons, I feel I should put pen to paper and inform your readership of the problems I have incurred with one such dealer.

I bought my first Amiga from them some two years ago and upon returning home and eagerly setting it up was presented with, two hours later, those immortal words "Something wonderful has happened." One phone call later and a couple of days' wait and I was in possession of a new set of disks and a virus killer.

Things went well for some 6 months until the sound chip decided to pack up and, after returning it to the shop, off it went to be repaired. Shortly after receiving my computer back I moved up to Carlisle (it's a nice place really) and upon it reaching 11 months of age it decided to quit altogether. A couple of phone calls to the dealer I bought it from and nothing, they just didn't want to know.

Eventually, after a visit to a helpful shop in Carlisle, I was put in contact with Granada Services who promptly collected and repaired it – thanks Granada. The following month saw me on the move yet again and approximately four and a half months after the last repair it suffered from a RAM chip failure (one and a half months outside the warranty from its last repair.)

Being only some 40 miles from the original specialist dealer I decided to return it for a quote, £180.00, at which point I decided to purchase a replacement with a 512K expansion. They didn't have a board in stock but would forward it on to me. Upon returning to Bedford I plugged in my Amiga and it didn't work at all. So, after checking through everything again, I decided the power supply was at fault. As I already had another I decided to check it out… wrong! They had managed to lose that as well. So, following another phone call and a lot of arguing, it was agreed that a replacement computer would be delivered. Still nothing. Another phone call also inquiring as to the whereabouts of my expansion board and they claim to know nothing about it but they will order me another one.

Eventually receiving my expansion board, I am still three months later no nearer to receiving my power supply unit back, despite several calls, and I am now having to resort to legal action to get my property back. So anyone else thinking of buying a computer, try to purchase one from a firm that's recommended by someone you know and who's used them. I know one firm I will not recommend.

A V Taylor
Houghton, Carlisle

BARNES STORMING

Who the hell is Neil Barnes? After going through *AF* Issue 7 letters, I just couldn't believe what I was reading. I have never had a letter published in a magazine in my life, yet here was someone with four in one issue.

Has he got some embarrassing photos with which he is blackmailing you to print all of his letters, or was it simply a few hundred quid in unmarked bills that did the trick?

Anyway, as to good examples of Amiga games music, surely *Shadow of the Beast* boasts some of the best around?

I now challenge Mr Barnes to slag me off in FIVE letters in the same issue.

Roger Isaac
Doncaster, South Yorkshire

FEMALE FORMAT

Is Neil Barnes of Kingstanding, Birmingham a relative of yours? I see he had four letters printed in *AF* Issue 7. It was quite humorous when letter three begins "I am writing to *Amiga Format* for the first time..."

Could we please have more letters from females – regardless of content – and more reviews and software for wives, like myself, fiancees, daughters and mothers. To say there is a hole in the market is an understatement, a crater would be a more accurate description - manufacturers please note.

PS I think it quite a cheek expecting free market research from your questionnaire – especially the income question. What do you intend doing with all the names and addresses?

Mrs I Burns
Spennymore, Co Durham

Neil only actually wrote one letter, but I took the liberty of splitting it up into four chunks because each one dealt with very different matters. However, the two printed this month from Karl Drinkwater really were two separate letters.

You are right about the free market research — it allows us to research what you want from the magazine. The more we know about you, the better equipped we are to provide the magazine you need. As for the names and addresses, I do not intend doing anything with them, they are a guarantee of authenticity, not a cheap mailing list.

LOST YEAR OF LIFE

I am 16.
Your questionnaire gives two options:
1) Under 16
2) 17 – 24
What happens to me?

Well, I'll tell you shall I? I get irritated, that's what happens to me!

I told you about that last time. Now, either sort it out or give back your O-level maths. '16 and under' is the expression, or 'under 17' or '16-24'. I don't care, but stop using 80386 maths routines please.

Michael Ashton

Ooooops. Sorry about that – it escaped me at the proofreading stage. It's probably an attempt by my subconscious to wipe out my 16th year when I had that nasty experience with the egg whisk and a space hopper.

MAGAZINE RATIONING?

I have been purchasing *AF* since Issue 1 and have been very pleased with the standard of news and reviews, but I have not failed to notice that the magazine gets harder to find every month.

After finding Issue 5 after two weeks of looking into my most frequently visited newsagents, I read that Issue 6 would be on the shelves on Tuesday 14th December 1989, including a demo of *Chase HQ*.

On 14th December 1989 I started to look for the shy and

Are software houses leaving a hole in the market by ignoring women? See 'Female Format'.



extremely reclusive *AF* Issue 6. To this day I have not seen the magazine once, despite looking in all my newsagents, the town centre and Milton Keynes.

Because the date is now 22nd January 1990, I would assume I am too late to purchase this issue. Therefore I have started looking for *AF* Issue 7.

When I eventually find this issue I will no doubt be using the mail order form to order last month's magazine that I have already spent a lot of time looking for.

My temper has slowly been rising beyond my control since I started looking for Issue 2 of your high-standard magazine. I am sure that I am not the only regular reader who has experienced the anger of not being able to find an issue on time.

Therefore, I ask you to make your magazine more widely available to the public who wish to buy it, because soon people are going to change to a magazine that is more widely available.

Christopher Murphy
Luton, Bedfordshire

Surprising as this may seem, we are not actually trying to hide the magazine. Since we came into existence nine months ago, the number of copies of the magazine we print (the 'print run') has gone from 49,000 on Issue One to 70,000 on Issue Eight. The circulation keeps rising and although we do our best to keep up with demand and predict the rise each month, it does mean we sell out in many areas.

The thing to do is reserve a copy with your newsagent or get a subscription. That way you are guaranteed to get your copy as soon as it comes out.



Programmer Dave Jones proves a hit in 'Gobsmacked by DJ'.

GOBSMACKED BY DJ

Whenever I read in a magazine a congratulatory letter pointing out what a marvellous job the columnists et al are doing, I usually reach for the sick bag. However, after reading *AF* Issue 7 I was totally gobsmacked at Dave Jones' games programming column.

The idea that we are going to get the business regarding games programming is excellent. I have always felt that when the Amiga community talks to each other and divulges the machines secrets to all, we will all get some serious software written (and none of this Guru nonsense either!)

Would it also be possible to specifically mention some of the techniques employed in 3D filled vector stuff?

Finally, I would like this letter to point out what a marvellous job the columnists et al are doing and that I look forward to following Dave Jones' column and hope that AF and especially Mr Jones have continued success in 1990.

Mike Pearson
Inverkeithing, Fife

I am glad you like Dave's series - we think he is doing a great job too. We are also planning more such tutorials on programming, from the people who really know. You can speculate on who that may be...

A THIEF WRITES

Dear Dude,

I am writing to express my growing concern about the state of software piracy in this country. As we all know there is a lot of pirated software around and it is much easier to pay the price of a disk than to pay over £30 for a manual and a nice shiny box.

I get about £5 a week and have a software collection of around £5000 – am I Paul Daniels? No, I'm a pirate and although I think it is unfair on the programmers, I am not ashamed to copy programs.

Most people will tell you that you cannot have your cake and eat it too. But at the moment, with copying programs available, piracy and hacking will go on until the programmers outwit the hackers. Till then, I, and 90% of Amiga users, will go on the way we always have.

The programmers have already proven that not all programs are easy to copy. For instance, on a Kickstart 1.3, a copy of *Falcon* will result in your plane blowing up before you get off the ground, owing to the protection on the first disk. After discovering this I went out and bought an original copy of Falcon and have never regretted it since - nice one Spectrum Holobyte.

Anonymous

Dear Dope,
Of course piracy will go on while numbskulls like you think the way you do. You clearly have no concept of right and wrong – if you were really concerned about software piracy you would not do it. As for claiming that 90% of Amiga users are pirates, that's drivel. If everyone took your attitude, a software industry would not exist. Trying to find safety in numbers does not justify your actions. If you want good software then be prepared to pay for it – programmers, artists, musicians and designers do not work for nothing.

RACKED OPINION

Being an avid games player, I am pleased to see a regular game review section in *Amiga Format*, but the reviews are always based around the views of three people, who give a very opinionated view of the games.

Perhaps, to get a broader view of the software, you should get some of your readers to review games for you. I know of several times when my friends and I have seen a review of a game, gone and bought it and been thoroughly disappointed. And at £25 I cannot afford to do that.

Mark Dawson
Oban, Scotland

I would question your suggestion that we are overly opinionated about games. Certainly we do give an opinion, but the main function of a review is to inform you of what goes on in the game, enabling you to judge for yourself whether you will like it. It's inevitable that opinions disagree about games, but I am confident that AF has some of the most reliable reviewers around.

HOT, GASSY LETTER

I own an Amiga and am getting tired of playing slow and repetitive games. People say that the Amiga is a better computer that the C64 but I have never had a jerky or slow 64 game. Perhaps they should bring back hanging for this.

Another comment, I must say, is why are your readers so boring. Going on about binders, CD RAMs and other useless and boring information – do they think we care?

Next comes the question, why is your mag £2.95? I know for a fact that disks only cost 45p from the duplicators and that you yourselves don't exactly pay a lot for the software on it. Do you have 80 people reviewing the one game?

What happened to fun games like *Manic Miner* and *Jet Set Willy?* Today's software houses have one thing on their minds – money, no pride. Today's programmers have become like factory workers who pass each section on to the next person who processes it on. It has already begun, games no longer differ from the last one.

Finally, the sun is a hot gassy ball (perhaps I will win the 'star' letter now.)

I know you will not print this letter because it wasn't boring enough, but if you do I will continue to buy your mag and know that not all factors of *Amiga Format* are run on commercially viable aspects.

Alan Barnes

1) There were loads of slow, jerky 64 games.
2) I wouldn't call readers boring if I were you – they are a mean bunch when aroused.
3) There are a lot of factors determining the price of the magazine: disk cost, duplicating, covermounting the disk, printing the magazine, buying the paper it's printed on, distribution, paying the people that write and lay out the mag, etc – not forgetting making a profit at the end of all that. I will leave calculating all that lot to the accountants.
4) Manic Miner? *See the News pages.*
5) Specialisation in design, programming, graphics, music etc, gets you better quality. Combining them into a whole does not always work, but the hit rate is getting better.
6) Of course all aspects of AF are run on a commercially viable basis – the magazine simply would not exist otherwise.

TOP TEN FRIDGE BEATERS

What a great cover for *AF* Issue 7! Pity the rest of the mag and disk was a let-down.

Since you supplied the *Menace* source code, is there anyway of reassembling it to play? That way I will be getting something this month!

I am writing because you wanted anybody's Top Ten for games music. Here you go – forgive me if my games collection is antique. Hanging on to its slot at No 10 is *R-Type*, followed by the singing spaceship at No 9, *Star Ray*... oh sod it, let's do it the boring way.

TOP TEN GAMES FOR MUSIC
10. *R-Type* (OK)
9. *Star Ray* (Quite good)
8. *IK+* (Nice)
7. *Starglider* (Neat)
6. *Beach Volley* (Quite nice)
5. *Ikari Warriors* (Quite neat)
4. *Xenon* (Good)
3. *Bionic Commando* (Bloody Good)

GURU's MEDITATION

PHOTOFILE FUNNIES

We printed the winning tie-breaker from *AF* Issue 6's Photofile competition last month, but we thought you would like to hear some of the other clever, witty and downright silly suggestions we got to the question "Which historical event you would like to have photographed and why?" So here we go...

"Hitler's expression as Jessie Owens won his fourth gold at the 1936 Olympics, to record the first defeat of the Nazi ideal."
R Allen, Egham, Surrey

"The Tunguska (Siberian) explosion of 1908 to see and understand the cause of such devastation in a pre-nuclear age."
Mat Broomfield, Langdon Hills, Essex

"Nicephore Niepce about to take the first photograph, as this would really annoy him."
N P K Cotter, Mannamead, Plymouth

"Me winning this competition."
Stuart Yaxley, Sprowston, Norwich

"The Battle of Trafalgar, where Admiral Nelson was shot, to see whether Captain Hardy really kissed him."
Dean Butcher, Stamford, Lincs

"Adam and Eve discussing apples, because mummy and daddy never talked to me."
D P A Cook, Newcastle Upon Tyne

"Lady Godiva riding through Coventry, because I am very interested in horses."
Anthony Croxford, Hatfield, Herts

"The creation of the ozone layer so we could all see what it looked like without a hole."
E V Lovesey, Huntingdon, Cambs

"The great fire of London lighting up the night sky for miles and the reflection on the river would be a sight to be captured."
Hoa N To, London SE17

"The formation of the Mediterranean sea as the Atlantic broke through the rock of Gibraltar. The most impressive fall of water hundreds of feet deep."
Anonymous



NEW TEAM MEMBERS

We have a whole new art team this month with Angela Neal and Marcus Dyson taking over from Trevor and Martin. Here at *AF*, we reckon Trev and Mart have made this the most stylishly-presented computer mag there is and would like to thank them for their unstinting efforts. They are now doing similar wonderful things for our sister mag, *ST Format*.

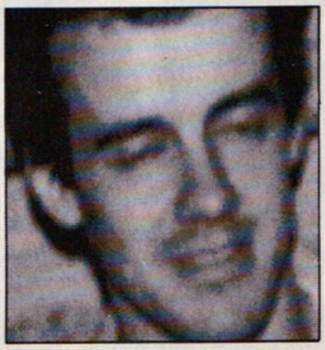
We're sure Ange and Marcus will keep up the high standard you have come to expect. Ange has been with Future Publishing for some time now, working on *ACE* and *New Computer Express* and contributing to most of the other mags too. Her experience can only strengthen the look of *AF*.

Marcus is new to working at Future, but not to the magazine, because he is an Amiga owner and read *AF* before joining. He has moved down to Bath from Wakefield, where his previous job was designing a body-building mag.

We would like to welcome them both to the team and are sure the mag will look even better for their arrival.

OH DEARY, DEARY ME

Despite going over last issue with a magnifying glass, I was unable to find any major mistakes – at this rate I'm going to be out of a job *(and about time too – Ed).*



CAPTAIN WHINGE

...and exactly how am I supposed to have a half-way decent whinge in two...

NEXT MONTH

Next month's issue is out on Thursday 12th April, just in time for Easter. A landmark in *AF* history, as we go bursting into double figures with Issue 10. Like any self-respecting person turning 10 we're going to whine bitterly until someone buys us a bike, roll around in large vats of jelly and ice-cream, and get so drunk that we can't tell the difference between Shake'n'Vac and margarine – OK, maybe not your average 10th birthday, but we're very advanced for our age. Naturally we will leave the celebrations until after we produce a corking issue, full of digitising, programming, *DPaint* tutorialling, educationinging, gamingingingin and much more -ing besides.

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